Final report

OWMC
Ontario
Waste Management
Corporation

A provincial crown corporation.

DILLON

SITE SELECTION PROCESS
PHASE 4A: SELECTION OF A PREFERRED SITE(S)
TRANSPORTATION
TECHNICAL APPENDICES

Prepared for:

ONTARIO WASTE MANAGEMENT CORPORATION

Prepared by:

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OCTOBER 1985

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31 October 1985

Dr. B.D. Mitchell
Director of Corporate Planning
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Attention: Mr. J.G. Micak
Manager, Environmental Projects

Site Selection Process
Phase 4A: Selection of a
Preferred Site(s) -
Transportation Technical
Appendices

Dear Sirs:

We are pleased to submit the enclosed report, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Transportation Technical Appendices.

This document is supplementary to our report, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Transportation.

Yours truly,

M.M. DILLON LIMITED

John R. Crosby

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LIST OF APPENDICES

A. Preliminary Phase 4A Access Route Analysis

B. Local and Regional Access Road Spill Risk Indices

C. The Impact of the Burlington Skyway's Capacity Problems on Routing to OWMC Facilities

D. Phase 4A Factor and Indicator Sheets

E. Transportation Model Update

F. Modelling Alternative Scenarios

G. Transport Cost Comparison

H. Local and Regional Access Road Improvements

I. Sensitivity Analysis of Special Waste Scenarios

J. Estimation of Heavy Truck Accident Rates

K. Accident Involvement and Spill Frequency for Special Waste, Inter-Site Transfers and Additive and Reagent Vehicles.

L. Noise Lvel Change

M. Development of Transportation Data for Partial Solidification

N. Data for Sensitivity Analysis Using Total Solidification and Rail Transport for Additivies and Reagents

O. Data for Sensitivity Analysis Using Partial Solidification

P. Data for Sensitivity Analysis Using Partial Solidification and Rail Transport for Additivies and Reagents

Q. A Statistical Analysis of Variation In Transportation Risk for OWMC Candidate Sites.

APPENDIX A

PRELIMINARY PHASE 4A ACCESS ROUTE ANALYSIS

1. INTRODUCTION

The preliminary access route option comparative analysis was carried out during the earlier stages of Phase 4A prior to the Phase 4A access route option comparative analysis. This preliminary investigation of access routes utilized largely Phase 3B factors to eliminate unacceptable access route options. A detailed description of the tranportation inputs to this process is contained in Chapter 4 of the Phase 4A Transportation Technical Report.

2. PRELIMINARY ACCESS ROUTE OPTIONS AND EVALUATION DATA

The access route options compared during the preliminary analysis are described in Table 1. This table also indicates which access route options were eliminated at this stage.

The evaluation data used to evaluate the access options are shown in Table 2. The results of the transportation analysis are presented in Chapter 4 of the Phase 4A Transportation Technical Report.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ACCESS ROUTE OPTIONS CONSIDERED IN PRELIMINARY PHASE 4A

LF-3C

1. from QEW - south on Vineland Townline Road (Niagara Regional Road 24); west on Highway 20: south on Niagara Regional Road 27; west on Elcho Road to LF-3C

*2. from QEW - south on Niagara Regional Road 18 (Beamsville Road); west on Niagara Regional Road 69 (Twenty Mile Road); south on Niagara Regional Road 569; south on Highway 20; south on Niagara Regional Road 27; west on Elcho Road to LF-3C

*3. from QEW - south on Niagara Regional Road 14; south on Niagara Regional Road 714; east on Niagara Regional Road 73; south on Niagara Regional Road 14; south on Niagara Regional Road 16 to LF-3C

*4. from QEW - south on Niagara Regional Road 18 (Beamsville Road); west on Niagara Regional Road 69; south on Highway 20; south on Niagara Regional Road 27; west on Elcho Road to LF-3C

*5. from QEW - south on Vineland Townline Road (Niagara Regional Road 24); west on Highway 20; west on Niagara Regional Road 65 from Bismarck; south on Smithville Road (Niagara Regional Road 16) to LF-3C

6. from QEW - south on Vineland Townline Road (Niagara Regional Road 24); west on Highway 20; west on Niagara Regional Road 65 from Bismarck; south on Krick Road to LF-3C

LF-9C

1. from QEW - south on Vineland Townline Road (Niagara Regional Road 24); west on Highway 20 to LF-9C

*2. from QEW - south on Niagara Regional Road 18; west on Niagara Regional Road 69; south on Niagara Regional Road 569; south on Highway 20; east on Highway 20 from Bismarck to LF-9C

*3. from QEW - south on Niagara Regional Road 18; west on Niagara Regional Road 69; south on Highway 20; east on Highway 20 to LF-9C

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ACCESS ROUTE OPTIONS CONSIDERED IN PRELIMINARY PHASE 4A

(continued)

LF-1E

1. from QEW - west on Niagara Regional Road 47 (Lyons Creek Road/Biggar Road); south on Niagara Regional Road 98 (Montrose Road); west on Carl Road to LF-1E

*2. from QEW - west on Niagara Regional Road 47 (Lyons Creek Road/Biggar Road); south on Morris Road to LF-1E

3. from QEW - west on Niagara Regional Road 47 (Lyons Creek Road/Biggar Road); south on Crowland Ave. to LF-1E

4. from QEW - west on Niagara Regional Road 47 (Lyons Creek Road/Biggar Road); south on Montrose Road (Niagara Regional Road 98); west on Young Road to LF-1E

5. from QEW - west on Niagara Regional Road 47 (Lyons Creek Road/Biggar Road); south on Montrose Road (Niagara Regional Road 98); west on Schisler Road (Niagara Regional Road 27) to LF-1E

LF-2N/PI-1N to PI-1N

1. from 401 - south on Fourth Line (partly Halton Regional Road 4); west on Britannia Road (Halton Regional Road 6) to PI-1N

*2. from 401 - south on Fourth Line (Halton Regional Road 4); west on Derry Road (Halton Regional Road 25); south on Highway 25 to PI-1N

PI-1N to LF-2N

1. east on Britannia Road (Halton Regional Road 6); north on Fourth Line (partly Halton Regional Road 4); east on Highway 401; north on Highway 10 to LF-2N

*2. west on Britannia Road (Halton Regional Road 6); north on Tremaine Road (Halton Regional Road 22); east on Steeles Avenue (Halton Regional Road 8); north on Highway 25; east on Highway 401; north on Highway 10 to LF-2N

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ACCESS ROUTE OPTIONS CONSIDERED IN PRELIMINARY PHASE 4A

(continued)

LF-2N/PI-13N
to PI-13N (from north)

1. from 401 - south on Fourth Line (partly Halton Regional Road 4); east on Britannia Road (Halton Regional Road 6); south on Fifth Line to PI-13N

*2. from 401 - south on Fourth Line (Halton Regional Road 4); east on Derry Road (Halton Regional Road 25); south on Fifth Line to PI-13N

*3. from 401 - south on Trafalgar Road (Halton Regional Road 3); west on Britannia Road (Halton Regional Road 6); south on Fifth Line to PI-13N

PI-13N to LF-2N

*1. north on Fifth Line; east on Britannia Road (Halton Regional Road 6); north on Trafalgar Road (Halton Regional Road 3); east on Highway 401; north on Highway 10 to LF-2N

2. north on Fifth Line; west on Britannia Road (Halton Regional Road 6); north on Fourth Line (partly Halton Regional Road 4); east on Highway 401; north on Highway 10 to LF-2N

*3. north on Fifth Line; west on Derry Road (Halton Regional Road 25); north on Fourth Line (Halton Regional Road 4); east on Highway 401; north on Highway 10 to LF-2N

*4. north on Fifth Line; east on Britannia Road (Halton Regional Road 6); north on Trafalgar Road (Halton Regional Road 3); east on Derry Road (Halton Regional Road 25, and Peel Regional Road 5) to LF-2N

LF-4N/PI-1N
to LF-4N

1. from 401 - south on Fourth Line (partly Halton Regional Road 4); west on Britannia Road (Halton Regional Road 6) to LF-4N

*2. from 401 - south on Fourth Line (Halton regional Road 4); west on Derry Road (Halton Regional Road 25); south on Highway 25; west on Britannia Road (Halton Regional Road 6) to LF-4N

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ACCESS ROUTE OPTIONS CONSIDERED IN PRELIMINARY PHASE 4A

(continued)

LF-1E/PI-27E

PI-27E to LF-1E

1. east on Niagara Regional Road 47 (Biggar Road); south on Niagara Regional Road 98 (Montrose Road); west on Carl Road to LF-1E

*2. west on Niagara Regional Road 47 (Biggar Road); south on Morris Road to LF-1E

3. west on Niagara Regional Road 47 (Biggar Road); south on Crowland Ave.

4. east on Niagara Regional Road 47 (Biggar Road); south on Niagara Regional Road 98 (Montrose Road); west on Young Road to LF-1E

5. east on Niagara Regional Road 47 (Biggar Road): South on Montrose Road (Niagara Regional Road 98); west on Schisler Road (Niagara Road 27) to LF-1E

NOTE: * Option(s) eliminated in preliminary Phase 4A analysis.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

SITE: LF-3C

		ACCESS ROUTE OPTION					
Entry Point[1]	Factor	1	2	3	4	5	6
	Local						
For routes 1, 2, 4 and 6: - Krick Road at Elcho Road	1. Proximity to arterial road (km)	3.7	3.7	0.0	3.7	0.0	2.8
For routes 3 and 5: - Niagara Regional Road #16 at Elcho Road	2. Number of level rail crossings on local roads	0	0	0	0	0	0
	Regional						
	3. Accidents per million vehicles	51.84	56.26	67.87	60.66	55.88	46.79
	4. Distance to freeways (km)	33.0	24.2	25.1	25.5	32.6	33.3
	5. Total number of level rail crossings	0	2	2	2	2	0
	6. Number of intersections where a turn is required	3	6	9	5	2	4

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: LF-9C

Entry Point[1]	Factor	ACCESS ROUTE OPTION 1	2	3
	Local			
For all routes: - Highway 20 at Schram Road	1. Proximity to arterial road (km)	0.0	0.0	0.0
	2. Number of level rail crossings on local roads	0	0	0
	Regional			
	3. Accidents per million vehicles	35.66	52.12	56.60
	4. Distance to freeways (km)	21.2	22.0	23.3
	5. Total number of level rail crossings	0	2	2
	6. Number of intersections where a turn is required:	1	6	5

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: LF-1E

		ACCESS ROUTE OPTION				
Entry Point[1]	Factor	1	2	3	4	5
	Local					
Carl Road at Morris Road for 1, 2	1. Proximity to arterial road (km)	2.5	1.0	2.0	1.7	0.0
Crowland at Young Road for 3, 4	2. Number of level rail crossings on local roads	0	1	0	0	0
Schislor at Crowland for 5						
	Regional					
	3. Accidents per million vehicles	7.95	5.78	6.35	7.56	11.57
	4. Distance to freeways (km)	3.9	3.9	4.1	4.1	4.9
	5. Total number of level rail crossings	0	2	1	0	0
	6. Number of intersections where a turn is required:	2	1	1	2	2

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: PI-1N

Entry Point[1]	Factor	ACCESS ROUTE OPTION 1	ACCESS ROUTE OPTION 2
	Local		
Highway 25 at Halton Regional Road #6 (Britannia Road)	1. Proximity to arterial road (km)	0.0	0.0
	2. Number of level rail crossings on local roads	0	0
	Regional		
	3. Accidents per million vehicles	15.74	9.93
	4. Distance to freeways (km)	8.4	8.2
	5. Total number of level rail crossings	1	1
	6. Number of intersections where a turn is required:	1	1

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: PI-1N to LF-2N

Entry Point[1]	Factor	ACCESS ROUTE OPTION 1	ACCESS ROUTE OPTION 2
	Local		
PI-1N: - Highway 25 at Halton Regional Road #6 (Britannia Road)	1. Proximity to arterial road (km)	N/A	N/A
	2. Number of level rail crossings on local roads	0	0
LF-2N: - Highway 10 1.9 km N/O Highway 401			
	Regional		
	3. Accidents per million vehicles	18.59	46.24
	4. Distance to freeways (km)	N/A	N/A
	5. Total number of level rail crossings	1	2
	6. Number of intersections where a turn is required:	3	5

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION
TABLE 2
TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS
(continued)

SITE: PI-13N

Entry Point[1]	Factor	ACCESS ROUTE OPTION 1	2	3
	Local			
Fifth Line 1.0 km s/o Britannia Road	1. Proximity to arterial road (km)	1.0	4.1	1.0
	2. Number of level rail crossings on local roads	0	0	0
	Regional			
	3. Accidents per million vehicles	13.93	11.12	12.62
	4. Distance to freeways (km)	8.6	8.8	8.8
	5. Total number of level rail crossings	1	1	1
	6. Number of intersections where a turn is required:	2	2	2

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: PI-13N to LF-2N

Entry Point[1]	Factor	ACCESS ROUTE OPTION			
		1	2	3	4
	Local				
PI-13N: - Fifth Line 1.0 km s/o Britannia	1. Proximity to arterial road (km)	1.0	1.0	1.0	1.0
LF-2N (for Options 1, 2 and 3) - Highway 10 1.9 km N/O Highway 401	2. Number of level rail crossings on local roads	0	0	0	0
	Regional				
(for option 4) - Peel Regional Road #5 (Derry Road) 0.6 km E/O Highway 10	3. Accidents per million vehicles	15.47	15.17	13.97	29.98
	4. Distance to freeways (km)	N/A	N/A	N/A	N/A
	5. Total number of level rail crossings	1	1	1	1
	6. Number of intersections where a turn is required:	4	4	4	5

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: LF-4N

Entry Point[1]	Factor	ACCESS ROUTE OPTION 1	ACCESS ROUTE OPTION 2
	Local		
Halton Regional Road #6 at Bell School Line	1. Proximity to arterial road (km)	0.0	0.0
	2. Number of level rail crossings on local roads	0	0
	Regional		
	3. Accidents per million vehicles	47.29	41.48
	4. Distance to freeways (km)	12.6	12.4
	5. Total number of level rail crossings	2	2
	6. Number of intersections where a turn is required:	3	5

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TRANSPORTATION DATA FOR EACH ACCESS ROUTE IN PRELIMINARY PHASE 4A ANALYSIS

(continued)

SITE: PI-27E to LF-1E		ACCESS ROUTE OPTION				
Entry Point[1]	Factor	1	2	3	4	5
	Local					
PI-27E: 0.5 km west of R.R. #98	1. Proximity to arterial road (km)	N/A	N/A	N/A	N/A	N/A
LF-1E: Carl Road at Morris for 1 and 2 - Carl Road at Young Road for 3 and 4 - Schisler at Crowland for 5	2. Number of level rail crossings on local roads	0	1	0	0	0
	Regional					
	3. Accidents per million vehicles	7.68	4.21	4.78	7.29	11.30
	4. Distance to freeways (km)	N/A	N/A	N/A	N/A	N/A
	5. Total number of level rail crossings	0	2	1	0	0
	6. Number of intersections where a turn is required	2	1	1	2	2

NOTE: 1. Analysis of options based upon preliminary estimate of site entry point.

APPENDIX B

LOCAL AND REGIONAL ACCESS ROAD SPILL RISK INDICES

Tabulation of Facility Site Options Data: Location of Physical Chemical Treatment Plant for Partially Integrated Siting Options (Report Chapter 7)

- Road User Risk Indices - Tables 4-9 (pp. B-9 to B-18)
  - Accident Involvement Risk Index
  - Total Spill Risk Index
- Residents (Population) Risk Index - Tables 13-18 (pp. B-25 to B-34)
- Sensitive Community and Recreational Features Risk Index - Tables 22-27 (pp. B-41 to B-50)
- Surface Water Spill Pathway Risk Index - Tables 31-36 (pp. B-56 to B-65)

Tabulation of Facility Site Options Used During the Detailed Comparative Analysis (Report Chapter 8)

- Road User Risk Indices - Tables 1-6 (pp. B-3 to B-13)
  - Accident Involvement Risk Index
  - Total Spill Risk Index
- Residents (Population) Risk Index - Tables 10-15 (pp. B-19 to B-29)
- Sensitive Community and Recreational Features Risk Index - Tables 19-24 (pp. B-33 to B-45)
- Surface Water Spill Pathway Risk Index - Tables 28-33 (pp. B-51 to B-60)
- Sensitive Hydrogeological Lands Risk Index - Tables 37-42 (pp. B-67 to B-76)

LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - TOTAL SOLIDIFICATION

- Accident Involvement Risk Index
- Total Spill Risk Index

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	2634	0.088	0.014	0.009	0.023		351.109	90.389	441.498
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190		2957.368	6799.909	9757.276
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	4010	1966.988	5063.789	7030.776
				Additives & Reagents	2634	0.066	0.011	0.006	0.017		264.988	68.218	333.206
				Inter-Site Transfors	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.557	0.089	0.055	0.143		2231.975	5132.007	7363.982
B. VINELAND TOWLINE ROAD (RR.24)													
1. OEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.282	14326.794	21671.997
				Additives & Reagents	2634	0.103	0.010	0.010	0.020		1476.090	288.867	1764.957
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120		8822.093	14614.861	23436.954
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	2634	0.011	0.002	0.001	0.003		174.068	46.947	221.014
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017		1039.780	2381.802	3421.582
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	2634	0.017	0.003	0.002	0.005		273.535	73.773	347.308
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027		1633.940	3742.832	5376.772
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	2634	0.087	0.009	0.008	0.018		1078.950	220.422	1299.372
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106		6445.029	11182.919	17627.948
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	2634	0.060	0.008	0.006	0.014		529.659	121.452	651.111
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082		3163.875	6161.777	9325.653
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	2634	0.063	0.011	0.006	0.017		467.944	126.206	594.150
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101		2795.228	6402.969	9198.197
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	840	44.147	535.974	580.121
				Additives & Reagents	2634	0.007	0.008	0.001	0.009		5.947	7.221	13.168
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.060	0.067	0.006	0.072		50.094	543.195	593.289

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	65	5.500	13.015	18.515
				Additives & Reagents	2634	0.011	0.002	0.001	0.003		0.741	0.175	0.916
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.096	0.013	0.009	0.023		6.241	13.191	19.431
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	50	5.641	13.349	18.990
				Additives & Reagents	2634	0.015	0.002	0.001	0.004		0.760	0.180	0.940
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030		6.401	13.529	19.930
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	95	18.756	44.385	63.142
				Additives & Reagents	2634	0.027	0.004	0.003	0.006		2.527	0.598	3.125
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.224	0.031	0.022	0.053		21.283	44.983	66.266
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	98	9.674	22.893	32.568
				Additives & Reagents	2634	0.013	0.002	0.001	0.003		1.303	0.308	1.612
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.112	0.016	0.011	0.027		10.978	23.202	34.179

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDICES: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	521142			
				Additives & Reagents	2634	0.568	0.084	0.056	0.140	84288	29184.286	57057.175	86241.460
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	22186	3.948	0.605	0.387	0.992	605430			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 2: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.250	6709.520	9315.770
				Additives & Reagents	2634	0.088	0.014	0.009	0.023		351.109	90.389	441.498
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190		2957.368	6799.909	9757.276
B. VINELAND TOWLINE ROAD (RR.24)													
1. OEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	2634	0.103	0.010	0.010	0.020		1476.890	288.067	1764.957
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120		8822.093	14614.861	23436.954
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	2634	0.011	0.002	0.001	0.003		174.068	46.947	221.014
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017		1039.780	2381.802	3421.582
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	2634	0.017	0.003	0.002	0.005		273.535	73.773	347.308
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027		1633.940	3742.832	5376.772
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	2634	0.087	0.009	0.009	0.018		1078.950	220.422	1299.372
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106		6445.029	11182.919	17627.948
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	2634	0.060	0.008	0.006	0.014		529.659	121.452	651.111
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082		3163.875	6161.777	9325.653
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	2634	0.063	0.011	0.006	0.017		467.944	126.206	594.150
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101		2795.228	6402.969	9198.197

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	315846			
				Additives & Reagents	2634	0.428	0.057	0.042	0.099	56631	26857.314	51287.068	78144.381
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	22186	2.772	0.372	0.272	0.644	372477			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A – TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 3: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA – LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	2634	0.011	0.001	0.001	0.002		50.482	9.846	60.328
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018		425.204	740.742	1165.946
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	2634	0.012	0.002	0.001	0.003		20.863	5.627	26.490
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028		175.727	423.301	599.028
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	1700	174.222	469.884	644.106
				Additives & Reagents	2634	0.014	0.002	0.001	0.004		23.471	6.330	29.801
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.116	0.020	0.011	0.031		197.693	476.214	673.907
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	50	7.051	16.686	23.737
				Additives & Reagents	2634	0.019	0.003	0.002	0.004		0.950	0.225	1.175
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.160	0.022	0.016	0.038		8.001	16.911	24.912
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	260	29.333	69.415	98.748
				Additives & Reagents	2634	0.015	0.002	0.001	0.004		3.952	0.935	4.887
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030		33.285	70.350	103.635

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	76253			
				Additives & Reagents	2634	0.071	0.010	0.007	0.017	10273	839.911	1727.517	2567.4284
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	22186	0.599	0.087	0.059	0.145	86525			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA PI 13N/LF 4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	999	0.004	0.001	.000	0.001	10100	36.162	136.338	172.500
				Additives & Reagents	5	.000	.000	.000	.000		0.181	0.068	0.249
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001		36.343	136.406	172.749
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.01	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	2629	0.009	0.001	0.001	0.002		208.682	49.383	258.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018		1680.884	3533.239	5214.123
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	2629	0.036	0.005	0.004	0.009		51.881	12.277	64.159
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069		417.892	878.414	1296.305
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	2629	0.061	0.008	0.006	0.014		82.525	19.529	102.053
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116		664.717	1397.243	2061.960
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	1040	272.295	734.390	1006.685
				Additives & Reagents	2634	0.020	0.003	0.002	0.005		36.694	9.897	46.591
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029		198.851	53.631	252.482
				TOTAL	36454	0.276	0.047	0.027	0.074		507.841	797.917	1305.758
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	1040	14.988	40.422	55.410
				Additives & Reagents	5	.000	.000	.000	.000		0.075	0.020	0.095
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031		214.147	57.756	271.904
				TOTAL	15278	0.125	0.021	0.012	0.034		229.210	98.199	327.409
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	1040	40.351	65.279	105.630
				Additives & Reagents	5	.000	.000	.000	.000		0.202	0.033	0.235
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051		576.551	93.272	669.823
				TOTAL	15278	0.335	0.021	0.033	0.054		617.104	158.583	775.687

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	RECEPTOR INDICES: TOTAL INDEX
4. Hwy. 25 to First Line E.	1.3	6.2	0.06	Special Wastes	0	0.000	0.000	0.000	0.000	470	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069		242.246	32.462	274.700
				TOTAL	14274	0.515	0.019	0.051	0.069		242.246	32.462	274.700
5. First Line E. to LF-4N	2.2	0.1	17.02	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.090
				TOTAL	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.090
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	390	54.903	130.112	185.095
				Additives & Reagents	2634	0.019	0.003	0.002	0.004		7.409	1.753	9.163
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		40.153	9.502	49.654
				TOTAL	36454	0.263	0.036	0.026	0.062		102.545	141.360	243.912

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	163005			
				Additives & Reagents	2634	0.145	0.021	0.014	0.035	20052	5800.538	8782.540	14591.085
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348	122756			
				TOTAL	36454	3.550	0.307	0.340	0.655	306613			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	10100	671.372	2531.191	3202.563
				Additives & Reagents	2629	0.009	0.003	0.001	0.004		95.166	35.879	131.045
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.021	0.007	0.029		766.537	2567.070	3333.608
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	2629	0.009	0.001	0.001	0.002		208.682	49.383	258.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018		1680.884	3533.239	5214.123
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	2629	0.036	0.005	0.004	0.009		51.881	12.277	64.159
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069		417.892	878.414	1296.305
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	2629	0.061	0.008	0.006	0.014		82.525	19.529	102.053
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116		664.717	1397.243	2061.960
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	1040	278.254	750.459	1028.713
				Additives & Reagents	2629	0.021	0.004	0.002	0.006		39.442	10.638	50.080
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047		317.696	761.097	1078.792
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	1040	749.144	1211.932	1961.077
				Additives & Reagents	2629	0.058	0.004	0.006	0.009		106.190	17.179	123.369
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075		855.334	1229.111	2084.445
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.098
				TOTAL	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.098

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	1060	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		109.133	25.825	134.958
				TOTAL	14274	0.103	0.014	0.010	0.024		109.133	25.825	134.958

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDICES: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	184731	6121.949	12000.717	18122.666
				Additives & Reagents	2634	0.195	0.025	0.019	0.044	24765			
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167	45677			
				TOTAL	36454	2.849	0.255	0.279	0.534	255173			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 6: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. OEW to RR. 90	0.4	2.3	0.92	Special Wastes	19552	0.001	0.000	0.000	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	2634	0.011	0.001	0.001	0.002		50.402	9.046	60.320
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018		425.204	740.742	1165.946
2. RR. 90 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	2634	0.012	0.002	0.001	0.003		20.863	5.627	26.490
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.006	0.000	0.000
				TOTAL	22186	0.103	0.010	0.010	0.020		175.727	423.301	599.020
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	1700	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020		127.192	34.304	161.496
				TOTAL	14274	0.075	0.013	0.007	0.020		127.192	34.304	161.496
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	50	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		5.140	1.210	6.366
				TOTAL	14274	0.103	0.014	0.010	0.024		5.140	1.210	6.366
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	260	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019		21.415	5.060	26.482
				TOTAL	14274	0.082	0.011	0.008	0.019		21.415	5.060	26.482

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	23462			
				Additives & Reagents	2634	0.023	0.003	0.002	0.005	3161	754.686	1204.633	1959.3186
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064	38540			
				TOTAL	36460	0.455	0.065	0.045	0.110	65163			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	10100	36.162	136.338	172.500
				Additives & Reagents	5	.000	.000	.000	.000		0.181	0.068	0.249
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001		36.343	136.406	172.749
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	2629	0.009	0.001	0.001	0.002		208.682	49.383	258.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018		1680.884	3533.239	5214.123
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	2629	0.036	0.005	0.004	0.009		51.881	12.277	64.159
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069		417.892	878.414	1296.305
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	2629	0.061	0.008	0.006	0.014		82.525	19.529	102.053
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116		664.717	1397.243	2061.960
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	3661	0.028	0.005	0.003	0.007	1840	51.001	137.553	188.554
				Additives & Reagents	249	0.002	.000	.000	0.001		3.469	0.934	4.404
				Inter-Site Transfers	1988	0.015	0.003	0.001	0.004		27.695	7.469	35.164
				TOTAL	5898	0.045	0.008	0.004	0.012		82.165	145.957	228.123
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	15674	0.128	0.022	0.013	0.034	1840	235.151	634.210	869.361
				Additives & Reagents	2380	0.019	0.003	0.002	0.005		35.706	9.630	45.336
				Inter-Site Transfers	1988	0.016	0.003	0.002	0.004		29.825	8.044	37.869
				TOTAL	20042	0.163	0.028	0.016	0.044		300.683	651.884	952.567
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	15674	0.344	0.022	0.034	0.056	1840	633.099	1024.199	1657.299
				Additives & Reagents	2380	0.052	0.003	0.005	0.008		96.132	15.552	111.684
				Inter-Site Transfers	1988	0.044	0.003	0.004	0.007		80.299	12.990	93.289
				TOTAL	20042	0.440	0.028	0.043	0.071		809.530	1052.742	1862.272
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	470	269.586	361.252	630.839
				Additives & Reagents	2385	0.086	0.003	0.008	0.012		40.476	5.424	45.900

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL INDEX
				Inter-Site Transfers	1988	0.072	0.003	0.007	0.010		33.739	4.521	38.260
				TOTAL	20250	0.731	0.026	0.072	0.098		343.801	371.197	714.998
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15805	1.268	0.035	0.124	0.159	800	1014.525	1273.811	2288.336
				Additives & Reagents	2385	0.190	0.005	0.019	0.024		152.323	19.125	171.448
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020		126.967	15.942	142.909
				TOTAL	20250	1.617	0.045	0.158	0.203		1293.815	1308.878	2602.693
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	3661	0.026	0.004	0.003	0.006	390	10.298	24.370	34.669
				Additives & Reagents	249	0.002	.000	.000	.000		0.700	0.164	0.866
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003		5.592	1.323	6.916
				TOTAL	5898	0.043	0.006	0.004	0.010		16.591	25.859	42.450

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDICES: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 3	25.6		54.04	Special Wastes	19546	3.150	0.223	0.309	0.533	223157	6044.542	10996.075	17040.616
				Additives & Reagents	2634	0.458	0.030	0.045	0.075	30364			
				Inter-Site Transfers	1988	0.320	0.017	0.031	0.048	17097			
				TOTAL	24168	3.936	0.271	0.386	0.656	270617			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 8: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	3872	0.014	0.004	0.001	0.005	10100	140.160	528.429	668.589
				Additives & Reagents	254	0.001	.000	.000	.000		9.194	3.466	12.661
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	4126	0.015	0.004	0.001	0.006		149.355	531.895	681.250
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	2629	0.009	0.001	0.001	0.002		208.682	49.383	258.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018		1680.884	3533.239	5214.123
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	2629	0.036	0.005	0.004	0.009		51.881	12.277	64.159
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069		417.892	878.414	1296.305
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	2629	0.061	0.008	0.006	0.014		82.525	19.529	102.053
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116		664.717	1397.243	2061.960
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	1840	278.254	750.459	1028.713
				Additives & Reagents	2629	0.021	0.004	0.002	0.006		39.442	10.638	50.080
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047		317.696	761.097	1078.792
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	1840	749.144	1211.932	1961.077
				Additives & Reagents	2629	0.058	0.004	0.006	0.009		106.190	17.179	123.369
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075		855.334	1229.111	2084.445
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	470	269.586	361.252	630.839
				Additives & Reagents	2385	0.086	0.003	0.008	0.012		40.476	5.424	45.900
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18270	0.660	0.024	0.065	0.088		310.063	366.676	676.739
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15885	1.268	0.035	0.124	0.159	800	1014.525	1273.811	2288.336
				Additives & Reagents	2385	0.190	0.005	0.019	0.024		152.323	19.125	171.448
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020		126.967	15.942	142.909
				TOTAL	20258	1.617	0.045	0.158	0.203		1293.815	1308.878	2602.693

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 8: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI IN/LF 4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	1060	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003		15.199	3.597	18.796
				TOTAL	1988	0.014	0.002	0.001	0.003		15.199	3.597	18.796

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDICES: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 3	24.3		52.35	Special Wastes	19546	3.200	0.226	0.314	0.539	225654			
				Additives & Reagents	2634	0.463	0.031	0.045	0.076	30737	6103.075	11504.405	17607.479
				Inter-Site Transfers	1988	0.173	0.006	0.017	0.023	6362			
				TOTAL	24168	3.836	0.263	0.376	0.639	262753			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 9: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-27E/LF-1E CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	2634	0.011	0.001	0.001	0.002		50.482	9.846	60.328
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018		425.204	740.742	1165.946
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	2634	0.012	0.002	0.001	0.003		20.863	5.627	26.490
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028		175.727	423.301	599.028
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	15885	0.083	0.014	0.008	0.022	1700	141.547	381.756	523.303
				Additives & Reagents	2385	0.013	0.002	0.001	0.003		21.252	5.732	26.984
				Inter-Site Transfers	1988	0.010	0.002	0.001	0.003		17.715	4.778	22.492
				TOTAL	20258	0.106	0.018	0.010	0.029		180.513	392.266	572.779
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	15885	0.115	0.016	0.011	0.027	50	5.729	13.557	19.285
				Additives & Reagents	2385	0.017	0.002	0.002	0.004		0.860	0.204	1.064
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003		0.717	0.170	0.887
				TOTAL	20258	0.146	0.020	0.014	0.035		7.306	13.930	21.236
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	15885	0.092	0.013	0.009	0.022	260	23.832	56.396	80.228
				Additives & Reagents	2385	0.014	0.002	0.001	0.003		3.578	0.847	4.425
				Inter-Site Transfers	1988	0.011	0.002	0.001	0.003		2.983	0.706	3.688
				TOTAL	20258	0.117	0.016	0.011	0.028		30.392	57.940	88.341

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 3	3.9		6.03	Special Wastes	19552	0.461	0.066	0.045	0.112	66352	819.143	1628.187	2447.3302
				Additives & Reagents	2634	0.067	0.010	0.007	0.016	9600			
				Inter-Site Transfers	1988	0.036	0.005	0.004	0.009	5360			
				TOTAL	24174	0.564	0.081	0.055	0.137	81320			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS (POPULATION) - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			1.668	0.383
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			125.485	28.828
2. LF-9C to RR. 65/PR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	147	0	105.630	0.000
				Additives & Reagents	2634	0.066	0.011	0.006	0.017			2.501	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.557	0.089	0.055	0.143			108.131	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			15.570	11.849
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			789.937	601.128
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.446	0.362
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			22.628	18.367
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.086	0.014
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			4.387	0.693
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.904	0.390
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			45.846	19.777
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.276	0.359
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			14.002	18.203
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.746	0.271
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			37.867	13.770
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	77	7	49.131	4.466
				Additives & Reagents	2634	0.007	0.008	0.001	0.009			0.662	0.060
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.060	0.067	0.006	0.072			49.793	4.527

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	4	0.000	0.001
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000	0.011
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.096	0.013	0.009	0.023			0.000	0.012
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	7	0.000	1.869
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	0.025
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	1.894
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	4	11	1.869	5.139
				Additives & Reagents	2634	0.027	0.004	0.003	0.006			0.025	0.069
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.224	0.031	0.022	0.053			1.894	5.209
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	2634	0.013	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.112	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	1279.970	713.206
				Additives & Reagents	2634	0.568	0.084	0.056	0.140	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	3.948	0.605	0.387	0.992	TOTAL	12799.705	713.206

SUM OF WEIGHTED TOTALS 13512.911

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			1.668	0.383
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			125.485	28.828
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			15.570	11.849
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			789.937	601.128
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.446	0.362
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			22.628	18.367
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.006	0.014
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			4.307	0.693
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	31	22	44.943	19.387
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.904	0.390
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			45.846	19.777
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.276	0.359
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			14.002	18.203
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.490
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.746	0.271
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			37.867	13.770

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1040.153	700.765
				Additives & Reagents	2634	0.420	0.057	0.042	0.099	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	2.772	0.372	0.272	0.644	TOTAL	10401.527	700.765
										SUM OF WEIGHTED TOTALS		11102.291

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/Marct 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 12: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			NO. OF RESIDENTS		RECEPTOR INDEX: RESIDENTS	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m)	150 - 500 (m)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.020	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			1.494	1.494
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	2634	0.014	0.002	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.116	0.020	0.011	0.031			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	3	0	1.001	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.013	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.160	0.022	0.016	0.038			1.015	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: RESIDENTS	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	2.509	1.494
				Additives & Reagents	2634	0.071	0.010	0.007	0.017	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	0.599	0.087	0.059	0.145	TOTAL	25.087	1.494

SUM OF WEIGHTED TOTALS 26.581

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS			NO. OF RESIDENTS		RECEPTOR INDEX: RESIDENTS	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m)	150 - 500 (m)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	0.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	160	85	13.023	7.343
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.030	7.347
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	3	0	0.040	0.000
				Additives & Reagents	5	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.041	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.111	0.051
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			7.930	3.660
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.732	0.043
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			52.397	3.082
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	19	3	7.583	1.197
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.102	0.016
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.554	0.087
				TOTAL	36454	0.276	0.047	0.027	0.074			8.239	1.301
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	38	10	0.835	0.220
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			1.193	0.314
				TOTAL	15278	0.125	0.021	0.012	0.034			2.028	0.534
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	26	3	0.922	0.106
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			1.318	0.152
				TOTAL	15278	0.335	0.021	0.033	0.054			2.241	0.259

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	3	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000	0.207
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000	0.207
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	1.431
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	1.431
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	3	0.000	30.033
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	3.004
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	3.024
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000	36.062

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	94.917	54.909
				Additives & Reagents	2634	0.145	0.021	0.014	0.035	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348	CORRIDOR WEIGHTED		
				TOTAL	36454	3.550	0.307	0.348	0.655	TOTAL	949.165	54.909

SUM OF WEIGHTED TOTALS 1004.075

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 14: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	0.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	157	79	13.564	6.825
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.003
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.570	6.828
3. PI-1N to Britannia Rd.	1	0.8	0.00	Special Wastes	10547	0.066	0.019	0.007	0.025	3	0	0.752	0.000
				Additives & Reagents	2629	0.009	0.003	0.001	0.004			0.011	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.021	0.007	0.029			0.762	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.111	0.051
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			7.930	3.660
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.420	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.732	0.043
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			52.397	3.082
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	10547	0.151	0.026	0.015	0.041	30	10	15.499	4.079
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.220	0.058
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047			15.718	4.136
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	10547	0.407	0.026	0.040	0.066	26	3	17.125	1.976
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.243	0.028
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075			17.368	2.004
5. First Line E. to LF-4N	2.2	0.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	1.431
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	1.431

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 14: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	115.957	22.160
				Additives & Reagents	2634	0.195	0.025	0.019	0.044	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167	CORRIDOR WEIGHTED		
				TOTAL	36454	2.849	0.255	0.279	0.534	TOTAL	1159.572	22.160

SUM OF WEIGHTED TOTALS 1181.740

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 15: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.020	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			1.494	1.494
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	3	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.073	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.073	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	1.567	1.494
				Additives & Reagents	2634	0.023	0.003	0.002	0.005	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064	CORRIDOR WEIGHTED		
				TOTAL	36460	0.455	0.065	0.045	0.110	TOTAL	15.671	1.494
										SUM OF WEIGHTED TOTALS	17.165	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatement process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	160	85	13.823	7.343
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.830	7.347
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	999	0.004	0.001	.000	0.001	3	0	0.040	0.000
				Additives & Reagents	5	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.041	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.111	0.051
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			7.930	3.660
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.732	0.043
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			52.397	3.082
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	3661	0.028	0.005	0.003	0.007	19	3	1.420	0.224
				Additives & Reagents	249	0.002	.000	.000	0.001			0.010	0.002
				Inter-Site Transfers	1988	0.015	0.003	0.001	0.004			0.077	0.012
				TOTAL	5898	0.045	0.008	0.004	0.012			1.507	0.238
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	15674	0.120	0.022	0.013	0.034	38	10	13.098	3.447
				Additives & Reagents	2380	0.019	0.003	0.002	0.005			0.199	0.052
				Inter-Site Transfers	1988	0.016	0.003	0.002	0.004			0.166	0.044
				TOTAL	20042	0.163	0.028	0.016	0.044			13.463	3.543
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	15674	0.344	0.022	0.034	0.056	26	3	14.472	1.670
				Additives & Reagents	2380	0.052	0.003	0.005	0.008			0.220	0.025
				Inter-Site Transfers	1988	0.044	0.003	0.004	0.007			0.184	0.021
				TOTAL	20042	0.440	0.028	0.043	0.071			14.876	1.716
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	0	3	0.000	2.306
				Additives & Reagents	2385	0.086	0.003	0.008	0.012			0.000	0.035

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
				Inter-Site Transfers	1988	0.072	0.003	0.007	0.010			0.000	0.029
				TOTAL	20258	0.731	0.026	0.072	0.098			0.000	2.369
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15885	1.268	0.035	0.124	0.159	0	10	0.000	15.923
				Additives & Reagents	2385	0.190	0.005	0.019	0.024			0.000	0.239
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020			0.000	0.199
				TOTAL	20258	1.617	0.045	0.158	0.203			0.000	16.361
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	3661	0.026	0.004	0.003	0.006	0	3	0.000	30.006
				Additives & Reagents	249	0.002	.000	.000	.000			0.000	3.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.000	3.003
				TOTAL	5898	0.043	0.006	0.004	0.010			0.000	36.010

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 3	25.6		54.04	Special Wastes	19546	3.150	0.223	0.309	0.533	TOTAL	112.254	75.353
				Additives & Reagents	2634	0.450	0.030	0.045	0.075	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.320	0.017	0.031	0.040	CORRIDOR WEIGHTED		
				TOTAL	24168	3.936	0.271	0.386	0.656	TOTAL	1122.540	75.353

SUM OF WEIGHTED TOTALS	1197.893

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	157	79	13.564	6.825
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.003
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.570	6.828
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	3872	0.014	0.004	0.001	0.005	3	0	0.157	0.000
				Additives & Reagents	254	0.001	.000	.000	.000			0.001	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	4126	0.015	0.004	0.001	0.006			0.158	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.111	0.051
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			7.930	3.660
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.732	0.043
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.060	0.048	0.116			52.397	3.082
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	38	10	15.499	4.079
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.220	0.058
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047			15.718	4.136
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	26	3	17.125	1.976
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.243	0.028
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075			17.368	2.004
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	0	3	0.000	2.306
				Additives & Reagents	2385	0.086	0.003	0.008	0.012			0.000	0.035
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18270	0.660	0.024	0.065	0.088			0.000	2.340
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15885	1.268	0.035	0.124	0.159	0	10	0.000	15.923
				Additives & Reagents	2385	0.190	0.005	0.019	0.024			0.000	0.239

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-IN/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020			0.000	0.199
				TOTAL	20258	1.617	0.045	0.158	0.203			0.000	16.361
E. FIRST LINE EAST (LOCAL)													
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.000	0.000
				TOTAL	1988	0.014	0.002	0.001	0.003			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE												
OPTION PI-IN/LF-4N CASE 3	24.3		52.35	Special Wastes	19546	3.200	0.226	0.314	0.539	TOTAL	115.353	39.439
				Additives & Reagents	2634	0.463	0.031	0.045	0.076	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.173	0.006	0.017	0.023	CORRIDOR WEIGHTED		
				TOTAL	24168	3.836	0.263	0.376	0.639	TOTAL	1153.527	39.439

SUM OF WEIGHTED TOTALS	1192.966

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 18: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-27E/LF-1E CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.020	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			1.494	1.494
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	15885	0.083	0.014	0.008	0.022	0	0	0.000	0.000
				Additives & Reagents	2385	0.013	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	1988	0.010	0.002	0.001	0.003			0.000	0.000
				TOTAL	20258	0.106	0.018	0.010	0.029			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	15885	0.115	0.016	0.011	0.027	3	0	0.813	0.000
				Additives & Reagents	2385	0.017	0.002	0.002	0.004			0.012	0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.010	0.000
				TOTAL	20258	0.146	0.020	0.014	0.035			0.836	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	15885	0.092	0.013	0.009	0.022	0	0	0.000	0.000
				Additives & Reagents	2385	0.014	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	1988	0.011	0.002	0.001	0.003			0.000	0.000
				TOTAL	20258	0.117	0.016	0.011	0.028			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 3	3.9		6.03	Special Wastes	19552	0.461	0.066	0.045	0.112	TOTAL	2.330	1.494
				Additives & Reagents	2634	0.067	0.010	0.007	0.016	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.036	0.005	0.004	0.009	CORRIDOR WEIGHTED		
				TOTAL	24174	0.564	0.081	0.055	0.137	TOTAL	23.298	1.494

SUM OF WEIGHTED TOTALS	24.792

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			9.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			0.000	0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	1	0	1.263	0.000
				Additives & Reagents	2634	0.066	0.011	0.006	0.017			0.017	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.557	0.089	0.055	0.143			1.280	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.030	0.100	1	2	1.000	2.001
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			0.020	0.040
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			1.021	2.041
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			0.000	0.000
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0	0.000	0.000
				Additives & Reagents	2634	0.007	0.008	0.001	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.060	0.067	0.006	0.072			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
0. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.096	0.013	0.009	0.023			0.000	0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0	0.000	0.000
				Additives & Reagents	2634	0.027	0.004	0.003	0.006			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.224	0.031	0.022	0.053			0.000	0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	2634	0.013	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.112	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	2.300	2.041
				Additives & Reagents	2634	0.560	0.084	0.056	0.140	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	3.940	0.605	0.387	0.992	TOTAL	23.004	2.041

SUM OF WEIGHTED TOTALS 25.045

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 20: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			0.000	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			0.020	0.040
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			1.021	2.041
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	2634	0.087	0.009	0.009	0.018			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1.021	2.041
				Additives & Reagents	2634	0.428	0.057	0.042	0.099	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	2.772	0.372	0.272	0.644	TOTAL	10.206	2.041
										SUM OF WEIGHTED TOTALS		12.247

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and childrem campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 21: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. 0EW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.000	0.016	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	2634	0.014	0.002	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.116	0.020	0.011	0.031			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.160	0.022	0.016	0.038			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.071	0.010	0.007	0.017	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	22186	0.599	0.087	0.059	0.145	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000	0.000
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0	0.000	0.000
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.000	0.000
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.000	0.000
				TOTAL	36454	0.276	0.047	0.027	0.074			0.000	0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.000	0.000
				TOTAL	15278	0.125	0.021	0.012	0.034			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.000	0.000
				TOTAL	15278	0.335	0.021	0.033	0.054			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000	0.000
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	0.000
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.145	0.021	0.014	0.035	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348	CORRIDOR WEIGHTED		
				TOTAL	36454	3.550	0.307	0.348	0.655	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS 0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residences" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.00	Special Wastes	10547	0.066	0.019	0.007	0.025	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.003	0.001	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.021	0.007	0.029			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.01	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000	0.000
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.02	Special Wastes	10547	0.151	0.026	0.015	0.041	0	0	0.000	0.000
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	10547	0.407	0.026	0.040	0.066	0	0	0.000	0.000
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075			0.000	0.000
5. First Line E. to LF-4N	2.2	0.1	17.02	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.105	0.138	0.323	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.195	0.025	0.019	0.044	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167	CORRIDOR WEIGHTED		
				TOTAL	36454	2.849	0.255	0.279	0.534	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS 0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 24: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (DIGGAR ROAD /LYON'S CREEK ROAD)													
1. OEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENCES 0 - 150 (m)	RECEPTOR INDEX: RESIDENCES 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.023	0.003	0.002	0.005	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064	CORRIDOR WEIGHTED		
				TOTAL	36460	0.455	0.065	0.045	0.110	TOTAL	0.000	0.000
										SUM OF WEIGHTED TOTALS		0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.176, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.0	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Berry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000	0.000
3. Berry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000	0.000
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	3661	0.028	0.005	0.003	0.007	0	0	0.000	0.000
				Additives & Reagents	249	0.002	.000	.000	0.001			0.000	0.000
				Inter-Site Transfers	1988	0.015	0.003	0.001	0.004			0.000	0.000
				TOTAL	5898	0.045	0.008	0.004	0.012			0.000	0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	15674	0.128	0.022	0.013	0.034	0	0	0.000	0.000
				Additives & Reagents	2380	0.019	0.003	0.002	0.005			0.000	0.000
				Inter-Site Transfers	1988	0.016	0.003	0.002	0.004			0.000	0.000
				TOTAL	20042	0.163	0.028	0.016	0.044			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	15674	0.344	0.022	0.034	0.056	0	0	0.000	0.000
				Additives & Reagents	2380	0.052	0.003	0.005	0.008			0.000	0.000
				Inter-Site Transfers	1988	0.044	0.003	0.004	0.007			0.000	0.000
				TOTAL	20042	0.440	0.028	0.043	0.071			0.000	0.000
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	0	0	0.000	0.000
				Additives & Reagents	2385	0.086	0.003	0.008	0.012			0.000	0.000

OMMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OMMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OMMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
				Inter-Site Transfers	1988	0.072	0.003	0.007	0.010			0.000	0.000
				TOTAL	20258	0.731	0.026	0.072	0.098			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15885	1.268	0.035	0.124	0.159	0	0	0.000	0.000
				Additives & Reagents	2385	0.190	0.005	0.019	0.024			0.000	0.000
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020			0.000	0.000
				TOTAL	20258	1.617	0.045	0.158	0.203			0.000	0.000
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	3661	0.026	0.004	0.003	0.006	0	0	0.000	0.000
				Additives & Reagents	249	0.002	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.000	0.000
				TOTAL	5898	0.043	0.006	0.004	0.010			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OMMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OMMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 3	25.6		54.04	Special Wastes	19546	3.158	0.223	0.309	0.533	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.458	0.030	0.045	0.075	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.320	0.017	0.031	0.048	CORRIDOR WEIGHTED		
				TOTAL	24168	3.936	0.271	0.386	0.656	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OMMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 26: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	3872	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	254	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	4126	0.015	0.004	0.001	0.006			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000	0.000
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0	0.000	0.000
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.173	0.030	0.017	0.047			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	0	0	0.000	0.000
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.465	0.030	0.046	0.075			0.000	0.000
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	0	0	0.000	0.000
				Additives & Reagents	2385	0.086	0.003	0.008	0.012			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18270	0.660	0.024	0.065	0.088			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	15885	1.268	0.035	0.124	0.159	0	0	0.000	0.000
				Additives & Reagents	2385	0.190	0.005	0.019	0.024			0.000	0.000

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 26: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020			0.000	0.000
				TOTAL	20258	1.617	0.045	0.158	0.203			0.000	0.000
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.000	0.000
				TOTAL	1988	0.014	0.002	0.001	0.003			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: COMM. & REC. FEATURES	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE												
OPTION PI-1N/LF-4N CASE 3	24.3		52.35	Special Wastes	19546	3.200	0.226	0.314	0.539	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.463	0.031	0.045	0.076	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.173	0.006	0.017	0.023	CORRIDOR WEIGHTED		
				TOTAL	24168	3.836	0.263	0.376	0.639	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 27: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY & RECREATIONAL FEATURES - PI-27E/LF-1E CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.500	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	15805	0.083	0.014	0.008	0.022	0	0	0.000	0.000
				Additives & Reagents	2305	0.013	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	1900	0.010	0.002	0.001	0.003			0.000	0.000
				TOTAL	20250	0.106	0.019	0.010	0.029			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	15805	0.115	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	2305	0.017	0.002	0.002	0.004			0.000	0.000
				Inter-Site Transfers	1900	0.014	0.002	0.001	0.003			0.000	0.000
				TOTAL	20250	0.146	0.020	0.014	0.035			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	15805	0.092	0.013	0.009	0.022	0	0	0.000	0.000
				Additives & Reagents	2305	0.014	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	1900	0.011	0.002	0.001	0.003			0.000	0.000
				TOTAL	20250	0.117	0.016	0.011	0.020			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 3	3.9		6.03	Special Wastes	19552	0.461	0.066	0.045	0.112	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.067	0.010	0.007	0.016	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	1988	0.036	0.005	0.004	0.009	CORRIDOR WEIGHTED TOTAL	0.000	0.000
				TOTAL	24174	0.564	0.081	0.055	0.137			

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community an :r150 - 500al features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - TOTAL SOLIDIFICATION

Note: The indicator developed is for 'surface water suitability' as discussed in Chapter 8, section 3 of the M.M. Dillon - Transportation report. 'Surface water spill pathway' is a sub-indicator which was combined with the sub-indicator 'downstream water uses' in the report, Gartner Lee Associates Ltd., 1985, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Surface Water.

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-3C CASE I (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.737	0.118	0.072	0.190			0.128	
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	400	0.10	0.126	166
				Additives & Reagents	2634	0.066	0.011	0.006	0.017			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.557	0.089	0.055	0.143			0.128	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.616	0.060	0.060	0.120			0.016	
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.064	0.011	0.006	0.017			0.100	
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.009	0.023	0	0.00	0.000	0
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.101	0.017	0.010	0.027			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.010	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.518	0.055	0.051	0.106			0.530	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.359	0.047	0.035	0.082			0.265	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.376	0.065	0.037	0.101			0.170	
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	460	0.15	0.098	309
				Additives & Reagents	2634	0.007	0.008	0.001	0.009			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.060	0.067	0.006	0.072			0.099	
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.005	0.012	0.008	0.020	100	0.17	0.033	45
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			.000	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 2B: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22106	0.096	0.013	0.009	0.023			0.034	
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	100	0.07	0.033	45
				Additives & Reagents	2634	0.027	0.004	0.003	0.006			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.224	0.031	0.022	0.053			0.034	
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	110	0.16	0.017	43
				Additives & Reagents	2634	0.013	0.002	0.001	0.003			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.112	0.016	0.011	0.027			0.017	
										TOTAL INDEX		1.521	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	5.000			0.000	
				TOTAL	22186	0.737	0.118	0.072	0.190			0.120	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	6.050	0.100	60	0.02	0.016	1
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			.000	
				Inter-Site Transfers	0	0.000	5.000	0.000	0.000			0.000	
				TOTAL	15734	0.616	0.060	0.060	0.120			0.016	
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.064	0.011	0.006	0.017			0.100	
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.101	0.017	0.010	0.027			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.010	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.518	0.055	0.051	0.106			0.530	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.359	0.047	0.035	0.082			0.265	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	15734	0.376	0.065	0.037	0.101			0.170	
										TOTAL INDEX		1.209	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 30: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000	0
				Additives & Reagents	2634	0.014	0.002	0.001	0.004			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.116	0.020	0.011	0.031			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000	0
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.160	0.022	0.016	0.038			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000	
										TOTAL INDEX		0.000	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 31: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. OEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1025	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	999	0.004	0.001	.000	0.001	0	0.00	0.000	0
				Additives & Reagents	5	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.011	0.007	0.018			0.016	
2. Main St. to Berry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.290	0.040	0.028	0.069			0.016	
3. Berry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.102	128
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.489	0.068	0.048	0.116			0.105	
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	250	0.19	0.077	77
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.001	
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.006	
				TOTAL	36454	0.276	0.047	0.027	0.074			0.083	
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	320	0.23	0.005	35
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.007	
				TOTAL	15278	0.125	0.021	0.012	0.034			0.012	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	715	0.51	0.018	32
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.026	
				TOTAL	15278	0.335	0.021	0.033	0.054			0.044	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 31: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	200	0.15	0.000	32
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.011	
				TOTAL	14274	0.515	0.019	0.051	0.069			0.011	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.020	
				TOTAL	14274	1.140	0.031	0.112	0.143			0.020	
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	400	0.40	0.133	36
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.002	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.010	
				TOTAL	36454	0.263	0.036	0.026	0.062			0.145	
											TOTAL INDEX	0.579	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 32: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.042	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0.00	0.000	0
				Additives & Reagents	2629	0.009	0.003	0.001	0.004			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.021	0.007	0.029			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.011	0.007	0.018			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.290	0.040	0.028	0.069			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	128
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.489	0.068	0.048	0.116			0.185	
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	320	0.23	0.093	35
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.173	0.030	0.017	0.047			0.095	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	715	0.51	0.336	32
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.465	0.030	0.046	0.075			0.341	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.020	
				TOTAL	14274	1.140	0.031	0.112	0.143			0.020	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 32: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - FI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	100	0.10	0.000	23
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.002	
				TOTAL	14274	0.103	0.014	0.010	0.024			0.002	
											TOTAL INDEX	0.721	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 33: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	SPILL PATHWAY INDEX (7,8,9)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	
											TOTAL INDEX	0.000	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 34: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-13N/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.8	0.00	Special Wastes	999	0.004	0.001	.000	0.001	0	0.00	0.000	0
				Additives & Reagents	5	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.011	0.007	0.018			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.290	0.040	0.028	0.069			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.420	0.059	0.042	0.101	575	0.18	0.182	128
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.489	0.060	0.048	0.116			0.185	
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	3661	0.028	0.005	0.003	0.007	250	0.19	0.014	77
				Additives & Reagents	249	0.002	.000	.000	0.001			.000	
				Inter-Site Transfers	1988	0.015	0.003	0.001	0.004			0.001	
				TOTAL	5898	0.045	0.008	0.004	0.012			0.015	
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	15674	0.128	0.022	0.013	0.034	320	0.23	0.079	35
				Additives & Reagents	2380	0.019	0.003	0.002	0.005			0.001	
				Inter-Site Transfers	1988	0.016	0.003	0.002	0.004			0.001	
				TOTAL	20042	0.163	0.028	0.016	0.044			0.081	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	15674	0.344	0.022	0.034	0.056	715	0.51	0.284	32
				Additives & Reagents	2380	0.052	0.003	0.005	0.008			0.004	
				Inter-Site Transfers	1988	0.044	0.003	0.004	0.007			0.004	
				TOTAL	20042	0.440	0.028	0.043	0.071			0.292	
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15805	0.574	0.021	0.056	0.077	200	0.15	0.118	32
				Additives & Reagents	2305	0.086	0.003	0.008	0.012			0.002	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 34: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-13N-LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
				Inter-Site Transfers	1988	0.072	0.003	0.007	0.010				
				TOTAL	20258	0.731	0.026	0.072	0.098			0.001	
												0.122	
5. First Line E. to LF-4N	2.2	0.1	17.02	Special Wastes	15085	1.268	0.035	0.124	0.159				
				Additives & Reagents	2385	0.190	0.005	0.019	0.024	300	0.14	0.217	65
				Inter-Site Transfers	1988	0.159	0.004	0.016	0.020			0.003	
F. FIFTH LINE (LOCAL)				TOTAL	20258	1.617	0.045	0.158	0.203			0.003	
												0.223	
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	3661	0.026	0.004	0.003	0.006				
				Additives & Reagents	249	0.002	.000	.000	.000	400	0.40	0.025	36
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			.000	
				TOTAL	5898	0.043	0.006	0.004	0.010			0.001	
												0.027	
										TOTAL INDEX		1.023	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 35: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-IN/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.6	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-IN to Britannia Rd.	1	0.8	0.00	Special Wastes	3872	0.014	0.004	0.001	0.005	0	0.00	0.000	0
				Additives & Reagents	254	0.001	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	4126	0.015	0.004	0.001	0.006			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.011	0.007	0.018			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.290	0.040	0.028	0.069			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.102	120
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.489	0.068	0.048	0.116			0.105	
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	320	0.23	0.093	35
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.173	0.030	0.017	0.047			0.095	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	715	0.51	0.336	32
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.465	0.030	0.046	0.075			0.341	
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	15885	0.574	0.021	0.056	0.077	200	0.15	0.118	32
				Additives & Reagents	2385	0.086	0.003	0.008	0.012			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18270	0.660	0.024	0.065	0.088			0.120	

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 35: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI IN/LF-4N CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
5. First Line E. to LF-4N	2.2	0.1	17.02	Special Wastes	15805	1.260	0.035	0.124	0.159	300	0.14	0.217	65
				Additives & Reagents	2385	0.190	0.005	0.019	0.024			0.003	
				Inter-Site Transfers	1900	0.159	0.004	0.016	0.020			0.003	
				TOTAL	20250	1.617	0.045	0.158	0.203			0.223	
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	100	0.10	0.000	23
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	1900	0.014	0.002	0.001	0.003			.000	
				TOTAL	1900	0.014	0.002	0.001	0.003			.000	
											TOTAL INDEX	1.043	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 36: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-27E/LF-1E CASE 3 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 90	0.4	2.3	0.92	Special Wastes	19552	0.080	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000
2. RR. 90 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	15885	0.083	0.014	0.008	0.022	0	0.00	0.000
				Additives & Reagents	2385	0.013	0.002	0.001	0.003			0.000
				Inter-Site Transfers	1988	0.010	0.002	0.001	0.003			0.000
				TOTAL	20258	0.106	0.018	0.010	0.029			0.000
B. CROWLAND ROAD (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	15885	0.115	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	2385	0.017	0.002	0.002	0.004			0.000
				Inter-Site Transfers	1988	0.014	0.002	0.001	0.003			0.000
				TOTAL	20258	0.146	0.020	0.014	0.035			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	15885	0.092	0.013	0.009	0.022	0	0.00	0.000
				Additives & Reagents	2385	0.014	0.002	0.001	0.003			0.000
				Inter-Site Transfers	1988	0.011	0.002	0.001	0.003			0.000
				TOTAL	20258	0.117	0.016	0.011	0.028			0.000
											TOTAL INDEX	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - TOTAL SOLIDIFICATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 37: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	0	0.00	0.000
				Additives & Reagents	2634	0.066	0.011	0.006	0.017			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.557	0.089	0.055	0.143			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			0.019
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			0.940
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.002
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			0.103
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			0.058
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			0.000
C. REGIONAL ROAD 65												
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0.00	0.000
				Additives & Reagents	2634	0.007	0.008	0.001	0.009			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.060	0.067	0.006	0.072			0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 37: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
D. KRICK ROAD (LOCAL)												
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.096	0.013	0.009	0.023			0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0.00	0.000
				Additives & Reagents	2634	0.027	0.004	0.003	0.006			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.224	0.031	0.022	0.053			0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0.00	0.000
				Additives & Reagents	2634	0.013	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.112	0.016	0.011	0.027			0.000
										TOTAL INDEX		1.133

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 38: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	2634	0.088	0.014	0.009	0.023			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.737	0.118	0.072	0.190			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	2634	0.103	0.010	0.010	0.020			0.019
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.616	0.060	0.060	0.120			0.940
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.064	0.011	0.006	0.017			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	2634	0.017	0.003	0.002	0.005			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.101	0.017	0.010	0.027			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	2634	0.087	0.009	0.008	0.018			0.002
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.518	0.055	0.051	0.106			0.103
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	2634	0.060	0.008	0.006	0.014			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.359	0.047	0.035	0.082			0.058
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	2634	0.063	0.011	0.006	0.017			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	15734	0.376	0.065	0.037	0.101			0.000
											TOTAL INDEX	1.133

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 39: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000
				Additives & Reagents	2634	0.014	0.002	0.001	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.116	0.020	0.011	0.031			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.160	0.022	0.016	0.038			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	2634	0.015	0.002	0.001	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.128	0.018	0.013	0.030			0.000
											TOTAL INDEX	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 40: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - FI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
B. HIGHWAY 25												
1. OEN to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-IN to Britannia Rd.	1	0.8	0.00	Special Wastes	999	0.004	0.001	.000	0.001	100	0.10	0.001
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.001
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.01	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000
D. BRITANNIA ROAD												
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0.00	0.000
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.000
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.000
				TOTAL	36454	0.276	0.047	0.027	0.074			0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.000
				TOTAL	15278	0.125	0.021	0.012	0.034			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	250	0.18	0.006
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.009
				TOTAL	15278	0.335	0.021	0.033	0.054			0.015

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 40: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000
F. FIFTH LINE (LOCAL)												
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.028	0.014	0.033	0	0.00	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000
											TOTAL INDEX	0.036

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 41: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. HIGHWAY 25												
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	10547	0.066	0.019	0.007	0.025	100	0.10	0.025
				Additives & Reagents	2629	0.009	0.003	0.001	0.004			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.076	0.021	0.007	0.029			0.025
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000
D. BRITANNIA ROAD												
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	10547	0.151	0.026	0.015	0.041	0	0.00	0.000
				Additives & Reagents	2629	0.021	0.004	0.002	0.006			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.173	0.030	0.017	0.047			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	10547	0.407	0.026	0.040	0.066	250	0.18	0.118
				Additives & Reagents	2629	0.058	0.004	0.006	0.009			0.002
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.465	0.030	0.046	0.075			0.119
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 41: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m) (6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
E. FIRST LINE EAST (LOCAL)												
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.06	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000
											TOTAL INDEX	0.164

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 42: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	2634	0.011	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.091	0.009	0.009	0.018			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	2634	0.012	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	22186	0.103	0.018	0.010	0.028			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.41	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000
											TOTAL INDEX	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

APPENDIX C

THE IMPACT OF THE BURLINGTON SKYWAY'S CAPACITY PROBLEMS ON ROUTINGS TO OWMC FACILITIES

1. INTRODUCTION

The Queen Elizabeth Way (QEW) has been identified as an important route in the OWMC transportation network because it could carry a large quantity of special wastes in the corridor between Toronto and Niagara Falls. The four-lane divided "Burlington Skyway" section of the QEW shown in Figure 1, crosses the Burlington Canal entrance to Hamilton Harbour, and has been recognized for its vulnerability to adverse weather conditions, high traffic volumes, low capacity, and a resultant high accident rate. The possible use of this route to transport hazardous materials has understandably caused concern, and has prompted M.M. Dillon Limited - Transportation to investigate this situation and to undertake a prognosis.

In this investigation, two existing alternative routes were examined which would avoid the use of the Skyway, in addition the plans and schedule for the proposed three-stage Burlington Skyway improvement, presently under construction, were examined. It was concluded that since the improvements to the Skyway are expected to greatly reduce the present accident rate and improve capacity, by the time the OWMC treatment facility is built, the Skyway will be the safest and most efficient alternate route for special waste haulage.

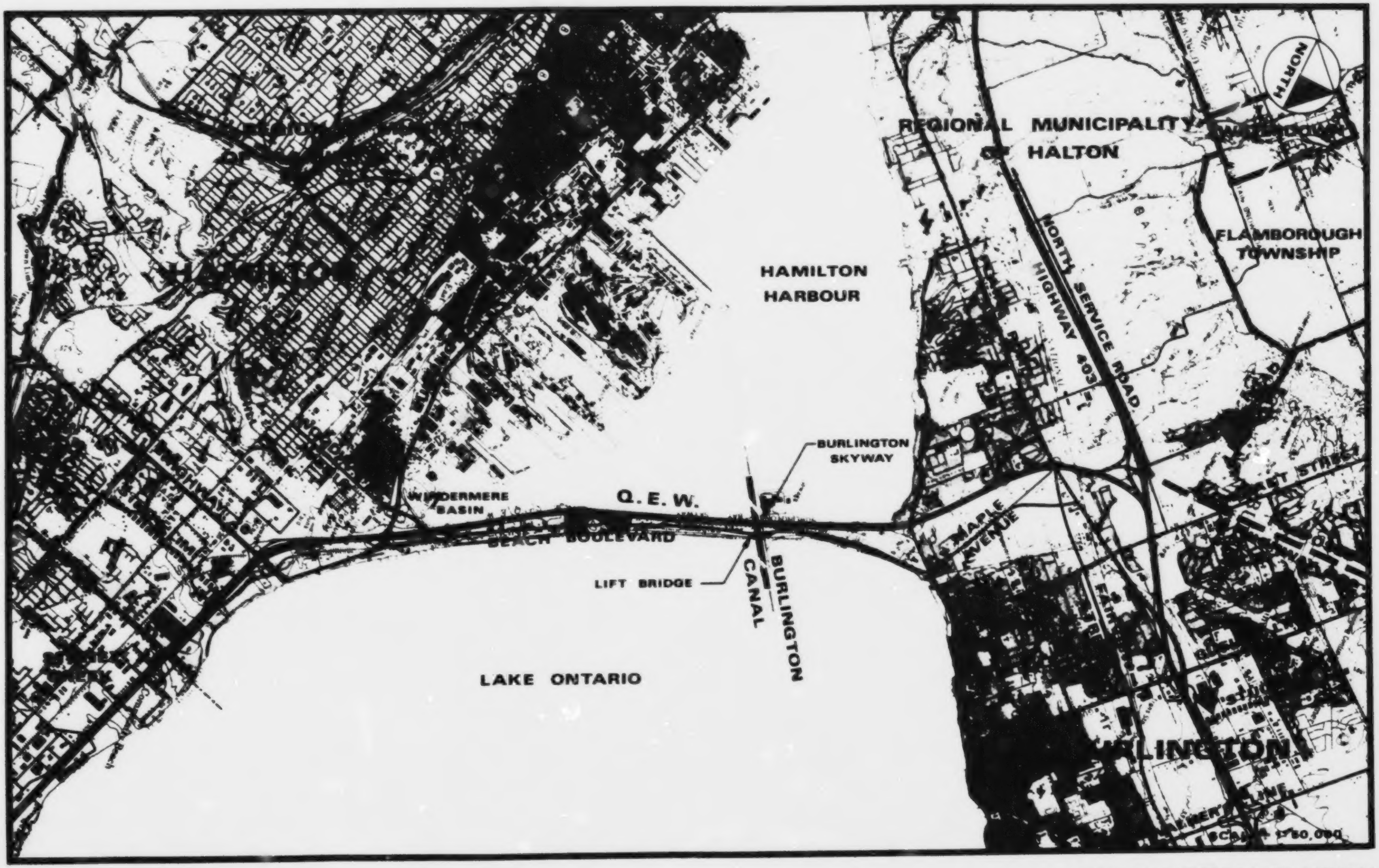
2. EXISTING CONDITIONS

The Burlington Skyway portion of the QEW was opened in 1958 and is flanked on the west by Burlington Bay and on the east by Lake Ontario. The Skyway is a four-lane divided freeway which crosses the 92 m wide Burlington Canal allowing a vertical ship clearance of 36.6 m. It is a steel structure with 3% approach grades.

Beach Boulevard, which occupies the same isthmus as the Skyway is a two-lane arterial roadway crossing the Burlington Canal via a liftbridge. The liftbridge was first opened to traffic in 1962 and accommodates two lanes of traffic and a single railway track. The Beach Boulevard is used as an alternate route between Burlington and Hamilton in the event that the Skyway is closed due to maintenance or inclement weather.

The Annual Average Daily Traffic (AADT) on the Skyway has grown constantly since its opening. In 1960 it carried an AADT of 17,000 vehicles and in 1980 this traffic volume had increased to 66,900 vehicles (reference 1).

The increased traffic demand on the Skyway has produced an increase in the stop and start conditions along the freeway. A freeway with start and stop traffic operation conditions is said to be experiencing a "Level-of-Service E" operation. The Ontario Ministry of Transportation and Communication policy considers a level-of-service D, which is a better level-of-service than E, to be the minimum tolerable condition for freeway operation (reference 1).


NORTH
REGIONAL MUNICIPALITY OF HALTON
FLAMBOROUGH TOWNSHIP
NORTH SERVICE ROAD
HIGHWAY 403
HAMILTON HARBOUR
BURLINGTON SKYWAY
Q. E. W.
WINDERMERE BASIN
BEACH BOULEVARD
LIFT BRIDGE
BURLINGTON CANAL
MAPLE AVENUE
LAKE ONTARIO
BURLINGTON
SCALE 1:50,000

BURLINGTON SKYWAY
FIGURE 1

Source: Reference 1

In 1972, the Skyway operated at a level-of-service E for approximately 25 hours in each direction, an average of one hour in each direction every two weeks. However, by 1981 the Skyway was operating at a level-of-service E for approximately 625 hours in each direction, an average of 1.7 hours a day in each direction (reference 1).

The deterioration in the level-of-service has also contributed to an increase in the number and frequency of accidents. In 1982, the Skyway was experiencing an accident frequency of more than twice the freeway provincial average of 0.76 accidents/ million vehicle-kilometres (reference 1).

There are few sections of freeway in Ontario with an accident rate as high as that of the Burlington Skyway; however, few of these other sections of freeway are as long nor are expected to carry as large a quantity of special wastes as the Skyway. Table 1 lists the traffic characteristics of the sections of Ontario freeways which have an accident rate of 2.0 accidents/ million vehicle-kilometres (MV km) or higher during the period between 1980 and 1982.

The strategy in selecting routes for waste haulage has been to maximize the use of Ontario freeway facilities since on-average their historical accident rates are lower than that of other classes of roads in the province (See Table 2). In addition to having lower traffic accident frequency, the freeway corridors reduce the likely socio-economic impacts of a special waste spills because of their wider right-of-way, shorter travel times and fewer traffic conflicts (e.g. intersections). However, the existing conditions on the Skyway indicate that it is operating well below the average provincial freeway level-of-service and possible roadway improvements are being examined.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ONTARIO FREEWAY SECTIONS WITH AN ANNUAL ACCIDENT RATE GREATER THAN 2.0 ACCIDENT/MILLION VEHICLE-KILOMETRES (1980-1982)

Section	Length (km)	Avg. Annual Two-Way Vol. (1000's of veh.)	Number of Acc./Yr.	Accident Rate (/MV km)
Highway 401: Islington to Hwy. 409	0.7	63,230	122	2.8
Highway 417: Nicholas to O'Connor	1.3	29,740	97	2.5
Highway 417: Parkdale to Island Park	1.0	31,901	80	2.5
QEW (Skyway): N. Access to Hamilton/ Burlington border	1.4	31,280	106	2.4
Highway 417: Alta Vista to O'Connor	2.6	31,220	194	2.4
Highway 401: Hwy. 2 to Towerline	1.1	7,000	18	2.3
Highway 417: Alta Vista to Nicholas	1.3	32,700	96	2.3
QEW (Skyway): S. Access to N. Access	4.2	31,240	279	2.1
QEW (Skyway): S. Access to Hamilton/ Burlington border	2.8	31,230	173	2.0

Source: Provincial Highways, Traffic volumes: King's Highway and Secondary Highway, 1980, 1981, 1982, Ontario Ministry of Transportation and Communications.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

ONTARIO AVERAGE ALL-VEHICLE ACCIDENT RATES BY ROADWAY CLASSIFICATION (1978-1982)

Road Class	Acc. Rate (/MV km)
- Freeways	0.76
- King's Highways:	1.20
- Secondary Highways:	1.61
- Other Roads:	4.29

Source: Provincial Highways, Traffic Volumes: King's Highway and Secondary Highway, 1982, Ontario Ministry of Transportation and Communications.

3. INVESTIGATION OF ALTERNATIVES

Two alternative routes (detailed in Attachment A) have been identified which would by-pass the Burlington Skyway. The first route diverts traffic from the QEW at the Highway 403 interchange and uses part-time and full-time truck routes on the outskirts of Hamilton as well as provincial highways to rejoin the QEW at Highway 20. The second route diverts traffic from QEW in a similar manner, but does not rejoin the QEW. Instead the route follows provincial highways to candidate sites in West Lincoln Township near Bismarck. The comparative route using the Skyway, exits the QEW at Vineland (Regional Road No. 24) and follows regional roads and Highway 20 to the Bismarck area.

The comparison of these alternative routes to the Skyway route considers differences in distance travelled, accident rates and exposure to large population centres. Table 3 shows a summary of these factors for each of the alternatives and the Skyway.

The comparison concludes that in terms of the accident frequency value, the existing Skyway route was better than the first alternative and marginally poorer than the second alternative. However, in terms of exposure to populated areas, the existing Skyway route is preferred to both alternatives.

3.1 QEW IMPROVEMENTS

In recognizing the problem on the QEW in the Burlington-Hamilton area, the Ontario Ministry of Transportation and Communications (MTC), and the Ontario Ministry of the Environment have approved a three-stage plan for the redevelopment of the QEW between Guelph Line, in Burlington, and Highway 20 in Hamilton.

The three stages can be summarized as follows (reference 1):

Stage 1 - New arterial across Beach Strip and reconstruction of the Queen Elizabeth Way between Highway 2 and Highway 403 to six through lanes.

OWMC PHASE 4A - TRANSPORTATION
TABLE 3
COMPARISON OF ALTERNATE ROUTINGS

	Alternative One	QEW-Skyway Route (Existing)
Distance Travelled	52.7 km.	12.1 km.
Accidents/MV.	114.0	16.0
Accident Rate (/MV km)	2.17	1.30
Exposure to Populations	- Hamilton Suburbs - Stoney Creek	- Hamilton industrial area

	Alternative Two	QEW-Skyway Route (Existing)
Distance Travelled	73.2 km.	60.9 km.
Accidents/MV.	128.0	111.0
Accident Rate (/MV km)	1.75	1.85
Exposure to Populations	- Hamilton Suburbs - Stoney Creek - Smithville	- Hamilton industrial area - Vineland

Stage 2 - "Twinning" of Burlington Skyway over the Burlington Canal accommodating three through lanes and one truck climbing lane each way. Providing for six through lanes on the Queen Elizabeth Way.

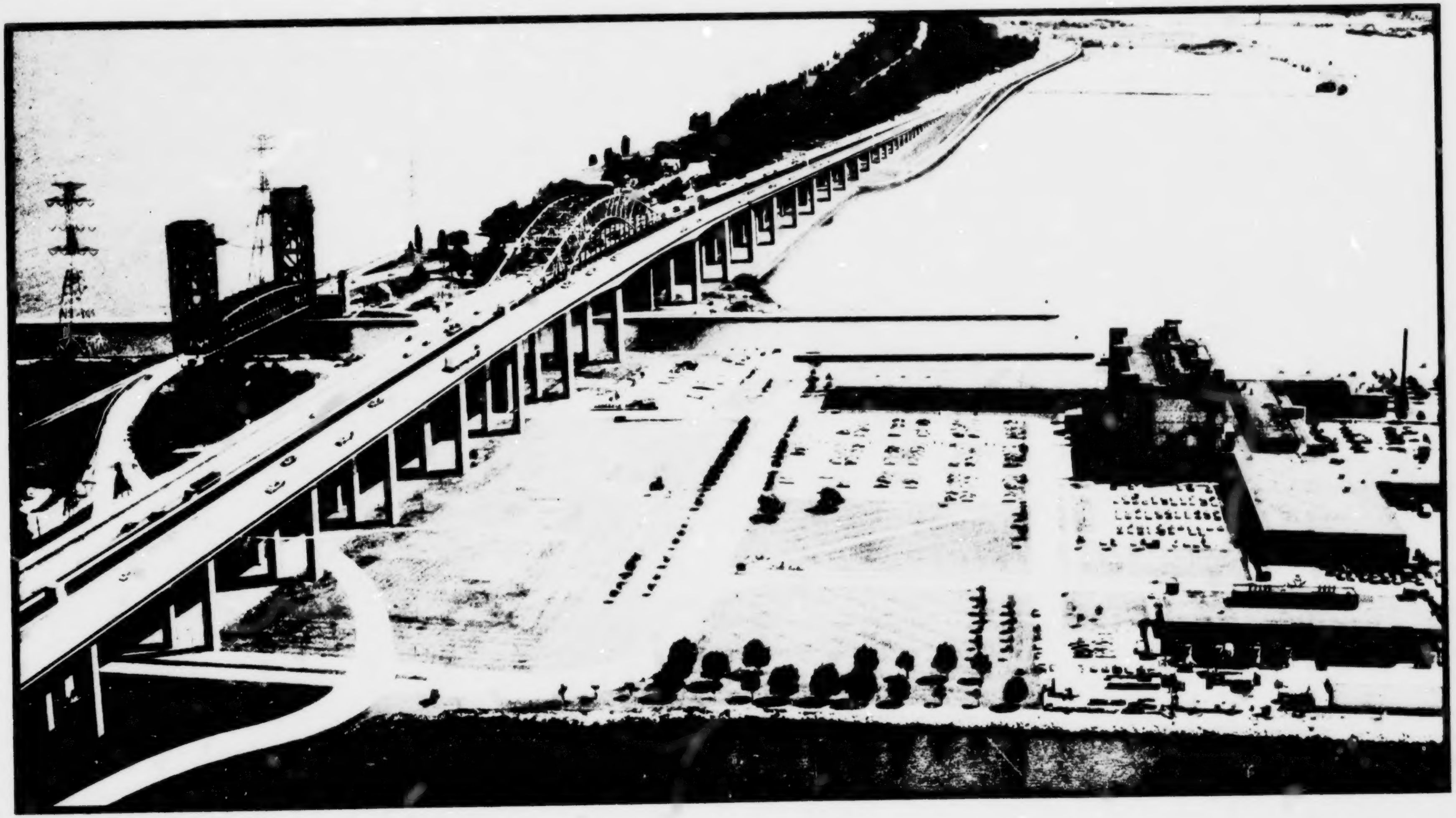
Reconstruction of existing Skyway to accommodate three through lanes and one truck climbing lane. Following reconstruction of the existing Skyway, a total of six through lanes and two truck climbing lanes will be available.

Stage 3 - Addition of freeway lanes and interchange modification in Burlington and Hamilton. Increase Skyway capacity to four through lanes and one truck lane in each direction. This would represent the "ultimate" design in this section of the Queen Elizabeth Way.

In addition, the MTC has approved the implementation of a Freeway Traffic Management System (FTMS) for the Skyway - Beach Strip combination which will be used to balance the capacity between these two roadways and provide advance information to motorists approaching the Skyway area.

MTC has estimated the completion dates for these improvements to be as follows:

Stage 1	Fall 1984
Stage 2	1987 (Opening of new structure)
Stage 3	1990
FTMS	Partial - Fall 1984 Complete - Fall 1987



ARTIST'S SKETCH OF NEW SKYWAY

FIGURE 2

Source: Reference 1

Since the assumed opening of the OWMC treatment plant facilities is 1991, the transport of special wastes can be expected to occur following the completion of the third stage of the improvements including the FTMS. Figure 2 presents an artist's conception of the twinning of the Burlington Skyway.

The benefit of these improvements is the increased capacity of this link on the QEW. The first stage, construction of the controlled access Beach Strip arterial, will increase the capacity of this surface route. The implementation of partial FTMS, designed to balance capacities between the two links by redirecting traffic to the route with the most reserve capacity, will help to increase the capacity of the entire link. In addition the widening of the section of QEW between Highway 403 and Highway 2 to six basic lanes will materially enhance the QEW's performance in this area.

At the completion of the second stage, the existing Skyway will be modified to carry northbound traffic in three through lanes and one truck lane. The QEW immediately north and south of the Skyway will also be widened to improve its capacity.

Finally during the third stage, the widening of the freeway between Guelph Line and Highway 20 to eight basic lanes, with two additional lanes for trucks on the Skyway, will provide the ultimate capacity for the freeway. Table 4 shows how the capacity of the Skyway and Beach Strip will increase at the completion of each stage of improvement. The present traffic volumes are shown in Table 5.

The effect of these capacity improvements are forecasted to improve the accident rates of both the Skyway and adjacent sections of the QEW.

OWMC PHASE 4A - TRANSPORTATION

TABLE 4

LEVEL-OF-SERVICE D* CAPACITY ON SKYWAY AND ARTERIAL ROAD

	Skyway (AADT)	Arterial Road (AADT)	Total (AADT)
Existing	36,000	9,000	45,000
Stage 1	36,000	27,000	63,000
Stage 2	72,000	27,000	99,000
Stage 3	90,000	27,000	117,000

OWMC PHASE 4A - TRANSPORTATION

TABLE 5

PRESENT TRAFFIC VOLUMES

Winter Average Daily Traffic:	56,900
Annual Average Daily Traffic:	66,900
Summer Average Daily Traffic:	81,600

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* Level-of-Service D represent 90% of the "breakdown" capacity of the roadway.

Source: Queen Elizabeth Way - Burlington to Hamilton (Stage 2 and 3): Environmental Assessment Report - MTC, May 1982.

It is estimated that following these improvements the accident rate will drop to the current provincial average of 0.76 accidents/million vehicle-kilometres (reference 1). Table 6 summarizes the characteristics of the previously identified alternative routes with the improved QEW. From this table it is concluded that the improvements to the QEW would enhance the safe and efficient transportation of dangerous goods over this route.

Completion of the Beach Strip arterial route would also provide an alternate route for trucks during periods of adverse weather conditions.

CONCLUSIONS

1. Although the Burlington Skyway's present traffic operational conditions are below those of the average Ontario freeway system, it provides advantages over alternative routings which would by-pass the Skyway, namely:

   - lower accident rate
   - less exposure to populated areas
   - less exposure to watercourses
   - less travel time and distance

2. The MTC's programmed improvements to the Skyway and the QEW, will serve to enhance the operation of this important network link in the following ways:

   - increase the capacity of the Skyway and QEW with additional lanes and truck climbing lanes

OWMC PHASE 4A - TRANSPORTATION
TABLE 6
COMPARISON OF ALTERNATE ROUTES TO ULTIMATE QEW

	Alternative One	QEW-Skyway Route Existing	QEW-Skyway Route Ultimate
Distance Travelled:	52.7 km.	12.1 km.	12.1 km.
Accidents/MV.	114.0	16.0	9.0
Accident Rate (/MV km)	2.17	1.30	0.76

	Alternative Two	QEW-Skyway Route Existing	QEW-Skyway Route Ultimate
Distance Travelled:	73.2 km.	60.9 km.	60.9 km.
Accidents/MV.	128.0	111.0	106.0
Accident Rate (/MV km)	1.75	1.83	1.74

- reduce the accident rate in this area;

- provide a new arterial route to by-pass the Skyway if necessary, due to Skyway closure to trucks as a result of adverse weather conditions;

- provide for capacity balancing through an FTMS which will alert all motorists to road conditions ahead.

3. Since the proposed OWMC treatment facility will not be opened until about 1991, transportation to the facility will have improved due to the planned improvements to the QEW within the vicinity of the Burlington Skyway. Consequently, the primary access route to OWMC facilities located within the Niagara peninsula should be via the Burlington Skyway link on the QEW.

REFERENCES

1. Ministry of Transportation and Communications. May 1982. _Queen Elizabeth Way: Burlington to Hamilton (Stages 2 and 3) Environmental Assessment Report_.

ATTACHMENT A
DETAILS OF ALTERNATE ROUTES BY ROAD SECTION

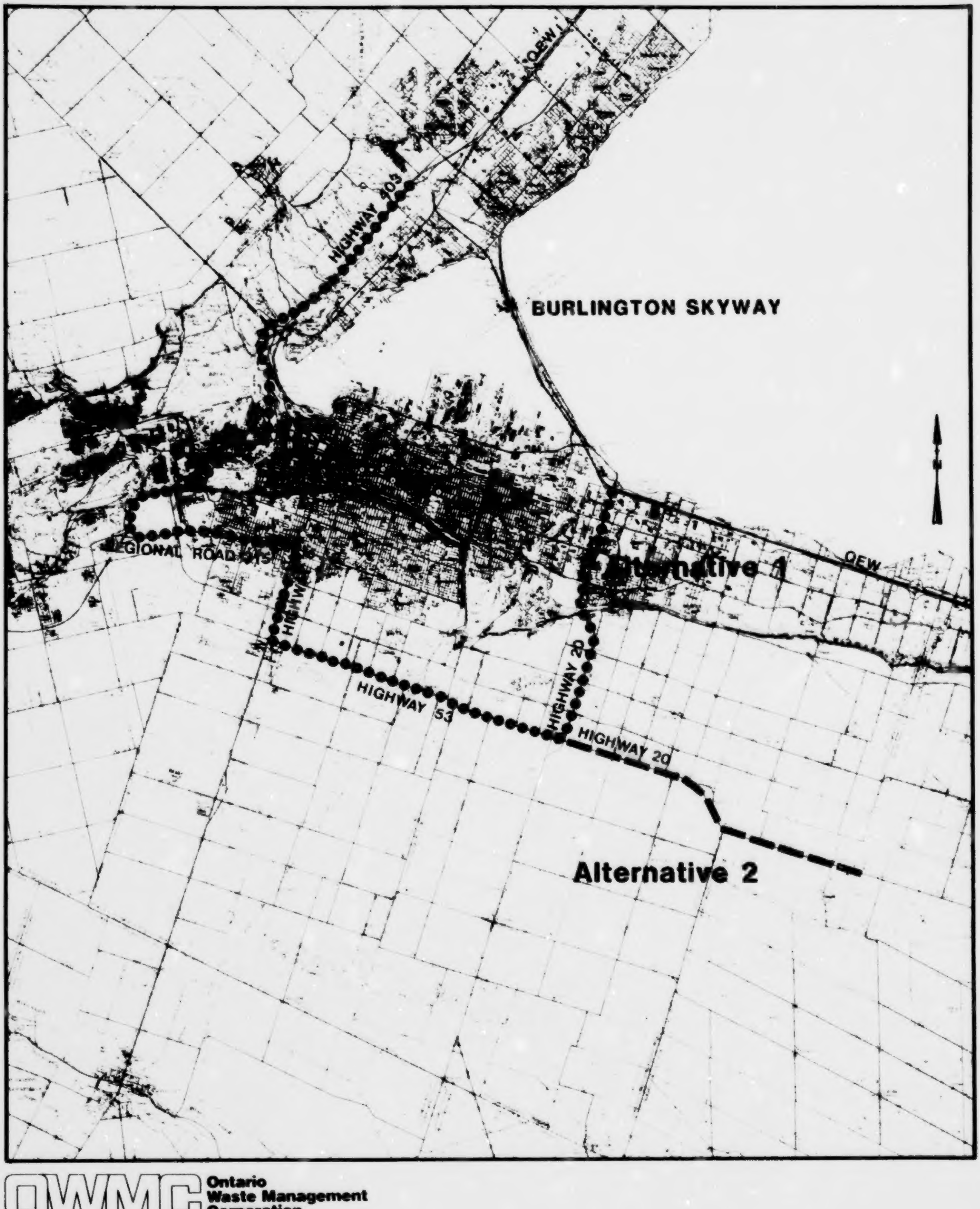
Route	Classification	Distance (km)	Acc. Rate (acc./MV.)
Alternate One			
Highway 403: QEW to Mohawk	Freeway	23.8	18.09
Mohawk: Hwy. 403 to Upper James	Other	6.0	25.75
Upper James: Mohawk to Rymal	Other	3.7	15.87
Rymal: Rymal to Hwy. 53	Other	6.7	28.74
Highway 53: Rymal to Highway 20	Provincial Highway	3.7	4.44
Highway 20: Hwy. 53 to Cent. Pkwy.	Provincial Highway	5.3	6.36
Cent. Pkwy. Hwy. 20 to QEW	Other	3.5	15.02
TOTAL		52.7	114.27

ATTACHMENT A
DETAILS OF ALTERNATE ROUTES BY ROAD SECTION
(continued)

Route	Classification	Distance (km)	Acc. Rate (acc./MV.)
Alternate Two			
Hwy. 403/Mohawk/ Upper James/Rymal QEW to Hwy. 53	Freeway/ Other	23.8 16.4	18.09 70.36
Hwy. 53: Rymal to Hwy. 20	Provincial Highway	3.7	4.44
Hwy. 20: Hwy. 53 to Bismarck	Provincial Highway	29.3	35.16
TOTAL		73.2	128.05

ATTACHEMENT A
DETAILS OF ALTERNATE ROUTES BY ROAD SECTION
(continued)

Route	Classification	Distance (km)	Acc. Rate (acc./MV.)
QEW Existing: 403 to Hwy 20			
QEW	Freeway	12.1	15.73 (actual based on 1980-82 data)
QEW Existing: 403 to Bismarck			
QEW	Freeway	12.1	15.73 (actual)
QEW: Hwy. 20 to R.R. 24	Freeway	23.7	18.01
R.R. 24: QEW to Hwy. 20	Other	15.8	67.78
Hwy. 20: R.R. 24 to Bismarck	Provincial Highway	9.3	11.16
TOTAL		60.9	112.68
QEW Ultimate: 403 to Bismarck			
QEW	Freeway	35.8	27.21
QEW to Bismarck	Other/Highway	25.1	78.94
TOTAL		60.9	106.15


QEW
HIGHWAY 403
BURLINGTON SKYWAY
N
REGIONAL ROAD 515
QEW
Alternative 1
HIGHWAY
HIGHWAY 20
HIGHWAY 53
HIGHWAY 20
Alternative 2
1 0 1 3 km

OWMC Ontario Waste Management Corporation

Consultant
DILLON

ALTERNATIVE ROUTES
FOR BY-PASSING
BURLINGTON SKYWAY

FIGURE A-1

APPENDIX D

PHASE 4A FACTOR AND INDICATOR SHEETS FOR

- LOCAL AND REGIONAL ACCESS ROUTE SELECTION
- RAIL ACCESS ROUTE SELECTION
- SITING OPTION COMPARISON IN DETAILED COMPARIATIVE ANALYSIS

FACTORS AND INDICATORS APPLIED TO LOCAL AND REGIONAL ACCESS ROAD SELECTION

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

FACILITY COMPONENTS AFFECTED: All facilities.

DEFINITION OF FACTOR: The probability of transport accidents represents the relative risk of transporting special wastes and additives and reagents or transferring treated wastes, along one route option as opposed to another. The calculation is based on the annual all-vehicle accident rates along routes used to travel from the 400-series highway to each candidate receiver site or between the components of non-integrated candidate sites.

Transportation safety relates to the characteristics of the local and regional access routes between the point of egress from the freeway system to the entrance of the candidate site or between non-integrated candidate sites.

RATIONALE/SIGNIFICANCE: The possibility of an accident is dependent upon the existing characteristics of the routes used. An analysis of the access route options in terms of their safety and historical accident rate will be an input to the route selection process.

INTERPRETATION/METHODOLOGY: By using historical data on all-vehicle accident rates along each section of the local and regional access route options, it is possible to estimate the composite accident rate for the entire route. The rate for each section will be weighted according to the length of the road section.

The geometric characteristics and length of the various road sections will determine the composite v/c ratio for each access route option. The number of intersections where turns are required will also be used to compare the relative safety of each route.

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

INDICATOR 1: Composite annual accident rate for each site local and regional access route option.

DEFINITION: This is the estimated annual number of all-vehicle accidents per million vehicles along the local and regional access route option between the 400-series highway and the site.

RATIONALE/SIGNIFICANCE: The estimated annual all-vehicle accident rate is representative of the possibility of a spill along the local and regional access routes. This indicator will be used in conjunction with other indicators to determine the best access route system with the least risk of accidents between the 400-series highway and the site.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications: all vehicle accident rates on Ontario Highways and road inventory data
- Peel, Halton and Niagara Regional Municipalities: road inventory data and accident rates on Regional Roads
- Milton, Town of Lincoln, Town of West Lincoln and City of Niagara Falls local road agencies: roadway inventory data.

COMMENTS/ASSUMPTIONS/LIMITATIONS: Since current data relating truck accident rates on Ontario roadways is unsuitable for this application, it has been necessary to use the historical accident rate relating to all vehicle accidents occurring on each road section. As accident rate data are not available on the local road links, it is necessary to assume an accident rate for each of these road sections. The rate assumed is 1.61 accidents per million vehicle kilometres (MV km) which is the weighted average rate for secondary provincial highways 1978-1982. The rationale for this assumption is that local roads would require physical upgrading to a condition equal to or better than provincial secondary highways.

AREA OF STUDY: Selection of a preferred local and regional access route options from 400-series highways to candidate sites.

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

INDICATOR 2: The number of public intersections along the local and regional access route options where a turn is required.

DEFINITION: This is the number of intersections that a vehicle transporting materials to the candidate site from the freeway will be required to turn to continue along the local and regional access route system to arrive at the candidate site.

RATIONAL/SIGNIFICANCE: Turns at public intersections pose a possible additional transport risk along the local and regional access route from the freeway, since present intersection geometrics may not be adequate for heavy truck maneouvres which may result in encroachment on opposing traffic lanes or shoulders.

SOURCES OF INFORMATION:

- 1:10,000 and 1:50,000 scale OWMC plans of access routes

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator represents the number of locations where the vehicles may be exposed to relatively higher risks than along other portions of the access routes. These risks can be minimized through alterations to the intersection geometrics and control strategies.

AREA OF STUDY: Selection of a preferred local and regional access route option from the 400-series highways to candidate sites.

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISK	TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

INDICATOR 3: The range in peak hour volume to capacity (V/C) ratio for local and regional access route option.

DEFINITION: The volume to capacity ratio is an indicator of a roadway's usage compared to its design capabilities. A road's capacity is related to its geometric features such as lane width, shoulder width, the terrain (such as flat, rolling or mountainous), and the percentage of traffic which is composed of trucks. The peak hour volume represents the "worst case" for traffic conditions on the roadway.

The volume to capacity ratio is related to level-of-service as shown in the attached drawing.

RATIONAL/SIGNIFICANCE: Volume to capacity ratios which approach 1.0 are indicative of high traffic density and difficult operating conditions on a roadway. This increases vehicle delay and may lead to stop-and-go operations which would increase the risk of motor vehicle accidents. Existing roadways experiencing V/C ratios exceeding 0.9 demonstrate a need for roadway widening or the construction of new routes to divert vehicle movement from this high V/C ratio routes.

SOURCES OF INFORMATION:

- MTC and various Regional and Municipal road agencies: roadway characteristics, present and future traffic volumes, and growth factors
- Traffic composition surveys of access road options
- MTC: capacity calculation procedures

COMMENTS/ASSUMPTIONS/LIMITATIONS: The V/C ratio represents the operational condition of the local and regional access route; however the V/C ratio can be improved through the altering of the roadways' geometrics (normally road widening), or construction of new roads within the travel corridor. The analysis is limited to current traffic operation on the local and regional access routes which may change over time. The second level of analysis for detailed comparative evaluation will consider the future changes (improvements) required on the preferred local and regional access routes.

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

COMMENTS/ASSUMPTIONS/LIMITATIONS (continued)

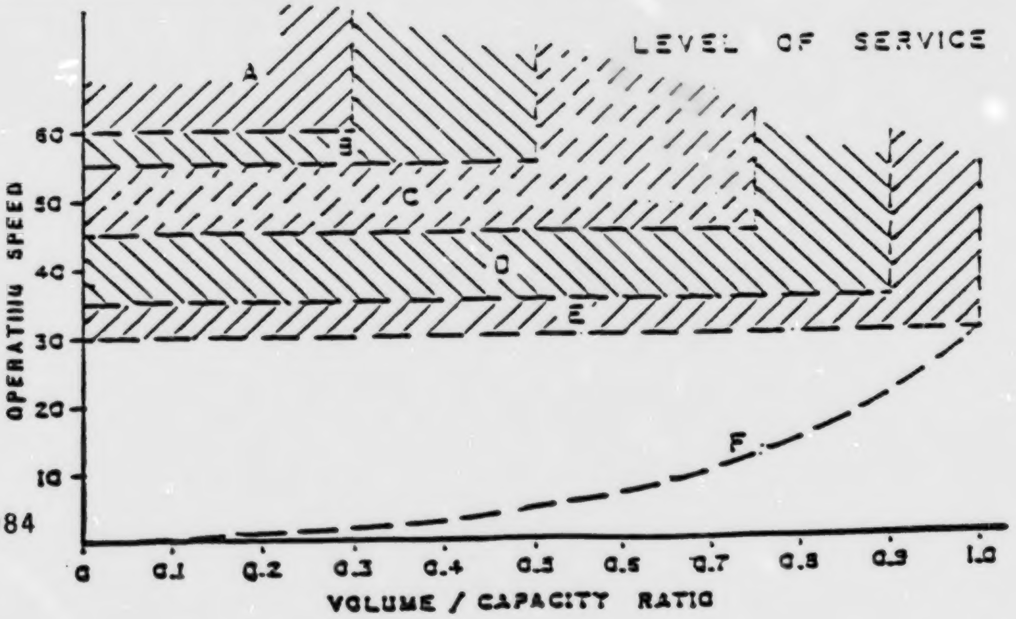
For purposes of this analysis intersectional capacity is ignored and emphasis is placed on road cross section adequacy along the link, as opposed to the adequacy of the road cross section available at intersections (e.g. left-turn or right-turn lanes, etc.).

AREA OF STUDY: Selection of preferred local and regional access road options from the 400-series highways to candidate sites.

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISK	TRANSPORTATION SAFETY, AND PROBABILITY OF TRANSPORT ACCIDENTS ALONG LOCAL AND REGIONAL ACCESS ROUTE OPTIONS

INDICATOR 3: Peak hour volume to capacity (V/C) ratio.

Level of Service	Operating Conditions
A	Free flow, low volumes and high operating speeds complete freedom for drivers to choose own speeds and lanes.
B	Stable flow, operating speeds somewhat restricted owing to volume increases, reasonable freedom for drivers to choose own speeds and lanes.
C	Stable flow, operating speeds and maneuverability more restricted owing to increased volumes.
D	Approaching unstable flow, operating speeds tolerable but considerably affected by operating conditions.
E	Operating speeds even lower than at level D, volumes at or near capacity.
F	Forced flow, low operating speeds and volumes varying below capacity.



OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION COSTS	FACTOR: ROAD IMPROVEMENT COSTS

FACILITY COMPONENTS AFFECTED: All facilities.

DEFINITION OF FACTOR: The costs of improving the local and regional access roads to accommodate the increase in heavy vehicle traffic expected due to the presence of the OWMC site.

RATIONALE/SIGNIFICANCE OF FACTOR: Existing roadways may not have the structural adequacy required to support the number of heavy vehicles which will be using the selected access routes. The capacity of the existing roads along these routes may also need to be improved to accommodate the increased traffic. There will be a cost associated with these improvements, which can be used to compare the suitability of access route options.

INTERPRETATION/METHODOLOGY: The existing structural adequacy and cross section width of roadways will be estimated on the basis of the data available in the appropriate municipal roadway appraisal sheets. The cost of improving the road will be estimated based on the current municipal "benchmark" costs.

The need for improved railway level crossing protection will be estimated based on the accepted standards as defined in the railway crossing warrants.

FACTOR GROUPING: TRANSPORTATION COSTS	FACTOR: ROAD IMPROVEMENT COSTS

INDICATOR 1: Road improvement construction cost.

DEFINITION: These are the costs for road improvements which may be incurred by OWMC or others, to provide adequate road cross sections and pavement structures to handle OWMC site generated transport vehicles.

RATIONALE/SIGNIFICANCE: For purposes of this indicator the existing roadway section AADT and percent of heavy trucks is used and surcharged with the expected heavy truck transport volumes anticipated to be generated by the operation of an OWMC candidate site. An equivalent AADT is derived which will account for the additional impact of the heavy trucks on the structural adequacy of the road. The estimated existing pavement design is reviewed with respect to this equivalent AADT to determine its adequacy. When the existing surface depth is structurally inadequate, the improvements required are then costed.

The resultant AADT, based upon the above procedure, and the truck volume percentage are used to determine if the existing road platform width (pavement and shoulders) is adequate to serve the resultant AADT. If it is not sufficient width, the cost of upgrading is also calculated.

SOURCES OF INFORMATION:

- MTC and various municipal and local governments: roadway traffic and roadway structural information, benchmark costs and provincial standards for road cross section requirements.

- MTC road structural standards

COMMENTS/ASSUMPTIONS/LIMITATIONS: These costs are estimated on the basis of the roadway's existing conditions and an assumed heavy truck surcharge due to OWMC site operation of 180 trucks per day on a five day per week schedule (two way total).

For purposes of this comparative analysis based upon existing conditions it has been assumed that the roadway allowances available are adequate to accommodate the required roadway improvements. This matter will be reviewed in greater detail for refinment of inputs once a preferred access route is selected.

AREA OF STUDY: Selection of preferred local and regional access road options between each candidate site and 400-series highways.

OWMC PHASE 4A: FACTORS FOR LOCAL AND REGIONAL ACCESS ROAD SELECTION

FACTOR GROUPING: TRANSPORTATION COSTS	**FACTOR:** ROAD IMPROVEMENT COSTS

INDICATOR 2: Off-site land acquisition required.

DEFINITION: The area of land required beyond the existing right-of-way to accommodate road widenings and geometric alterations along the local and regional access routes between the 400-series highways and the site entrance.

RATIONALE/SIGNIFICANCE: In addition to the road improvement construction costs, small areas of land may need to be purchased outside the existing right-of-way, in order to accommodate the improved roadways. The cost of these land aquisitions will depend upon the local land values. Consequently, land area required was used for the comparison of local and regional access road options. Following the selection of the preferred access road option, preliminary land appraisals were undertaken to estimate land acquisition cost. The resulting land acquisition cost was then used by the engineering consultant as an input to site selection.

SOURCES OF INFORMATION:

- OWMC 1:10,000 and 1:50,000 scale plans of the selected access routes.
- Land acquisition costs as provided by Graydon Rodgers Appraisals Ltd.

COMMENTS ASSUMPTIONS/LIMITATIONS: Additional right-of-way may also be required where additional grading is required for road improvement. This will be determined during a later stage of site selection.

AREA OF STUDY: Selection of preferred local and regional road access options.

FACTORS AND INDICATORS APPLIED TO RAIL ACCESS ROUTE SELECTION

OWMC PHASE 4A: FACTORS FOR RAIL ACCESS ROUTE SELECTION

FACTOR GROUPING:	FACTOR:
TRANSPORTATION RISK	TRANSPORTATION SAFETY

FACILITY COMPONENTS AFFECTED: All physical chemical/incineration facilities where rail access is feasible.

DEFINITION OF FACTOR: Transportation safety relates to the characteristics of the rail access options between the mainline and the candidate site boundary.

INTERPRETATION/METHODOLOGY: Using the most recent information available from OWMC 1:10 000 base mapping, the number of roadways crossed by the rail access options will be estimated as the indicator of transportation safety. As both the number of motor vehicles and rail car movements relate to potential conflicts and motor vehicle delay, an exposure calculation input will be developed for the comparison of candidate site LF-9C which has two directional rail access options.

OWMC PHASE 4A: FACTORS FOR RAIL ACCESS ROUTE SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY

INDICATOR 1: Number and type of road crossed along rail alignment options to candidate sites.

DEFINITION: The number of level road crossings required to reach the plant boundary from the main rail line categorized by type of roadway (i.e. regional road, local road, site access road, or provincial highway).

RATIONALE/SIGNIFICANCE: Transportation safety along the roadways near the candidate site may be affected by the introduction of level railway crossings. The impact of such conflicts may be mitigated through the installation of adequate safety devices at the crossing. Such costs are including in the factor "Rail Construction Cost" for each rail option.

The crossing of an access road has greater risks than non-access roads since it exposes the haulage of special wastes, additives and reagents and inter-site transfer movements to level rail crossings. The crossing of provincial highways has even greater importance, and an exposure index is used to relate the road traffic and the rail movements.

SOURCES OF INFORMATION:

- 1:50,000 and 1:10,000 scale OWMC plans of the rail access options
- Provincial, municipal and local road agencies preliminary comments regarding possible railway crossings of roadways.

COMMENTS/LIMITATIONS/ASSUMPTIONS: Rail crossings of existing roadways should be minimized to avoid rail/roadway conflicts and potential accidents at new level crossings.

AREAS OF STUDY: Rail access route options.

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY

INDICATOR 2: Provision for adequate sight and stopping distance along the roadway between a level railway crossing and the nearest roadway intersection.

DEFINITION: This indicator provides a measure of safety of a level rail crossing to the motorists using the roadway.

RATIONALE/SIGNIFICANCE: The Ontario Ministry of Transportation and Communications Manual of Uniform Traffic Control states that for roadways where the posted speed is 80 km/hr that the adequate warning distance for level railway crossing is 180 to 240 m. Therefore it is necessary to separate a roadway intersection and railway crossing by this distance in order that vehicles turning on to the roadway would have adequate sight and stopping distance prior to encountering the crossing.

SOURCES OF INFORMATION:

- 1:10,000 scale OWMC plans of the rail access options;
- Ontario Ministry of Transportation and Communications Manual of Uniform Traffic Control.

COMMENTS/ASSUMPTIONS/LIMITATIONS: The rail access options were developed based upon the operational constraints of a railway industrial spur line. This safety indicator evaluates these options in terms of their compatibility with the existing roadways which cross the new rail spur line. A rail option which does not meet the 180 m stipulation would be considered unsafe to the road users. The rail option between 180 m and 240 m are safer because they met the minimum requirements. The rail option with a 240 m separation is the most acceptable.

OWMC PHASE 4A: FACTORS FOR RAIL ACCESS ROUTE SELECTION

FACTOR GROUPING: TRANSPORTATION COSTS	**FACTOR:** RAIL CONSTRUCTION COSTS

FACILITY COMPONENTS AFFECTED: All sites where rail access is feasible.

DEFINITION OF FACTOR: This is the cost of constructing a rail line between the candidate site facility plant and the appropriate national rail line. It excludes on-site yard storage construction costs which will be developed by the engineering consultant.

RATIONALE/SIGNIFICANCE OF FACTOR: If it is viable to access the site by rail, the cost of each rail access option will include the costs associated with constructing a rail line to connect the candidate site facilities to the national rail line.

INTERPRETATION/METHODOLOGY: Specific rail access options will be selected based on the on and off-site constraints between the facility plant and the mainline. These constraints include environmental, socio-economical and transportation. Following the selection of a number of specific alignment options, each option will be evaluated and a preferred rail option selected for site access.

OWMC PHASE 4A: FACTORS FOR RAIL ACCESS ROUTE SELECTION

FACTOR GROUPING:	FACTOR:
TRANSPORTATION COSTS	RAIL CONSTRUCTION COSTS

INDICATOR 1: Total cost of constructing each railway spur line option from rail line to site facility plant.

DEFINITION: This is the total cost of construction including rail lines, rail crossings at roadways, and road crossing protection requirements.

RATIONALE/SIGNIFICANCE: These costs are only applicable in the instances where rail access is a viable access mode in terms of both accessibility and operation costs. Where this is possible, the cost of rail construction will be used to compare alternative rail access options.

SOURCES OF INFORMATION:

- OWMC 1:10 000 and 1:50 000 scale plans of site and vicinity.
- Contact with railway companies that control and operate nearby rail lines

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator is applicable only where rail access is viable.

AREA OF STUDY: Railway access options.

OWMC PHASE 4A: FACTORS FOR RAIL ACCESS ROUTE SELECTION

FACTOR GROUPING: TRANSPORTATION COSTS	**FACTOR:** RAIL CONSTRUCTION COSTS

INDICATOR 2: Total off-site land acquisition required.

DEFINITION: The area of off-site land required to construct the rail spur line infrastructure.

RATIONALE/SIGNIFICANCE: In addition to the cost of constructing the rail spur line a 18.3 m wide railway right-of-way will need to be purchased to accommodate the railway spur line between the mainline and site boundary. The cost of these land acquisitions will depend upon the local land values. Consequently, land area required was used for the comparison of rail access options. Following the selection of the preferred rail option, preliminary land appraisals were undertaken to estimate land acquisition cost. The resulting land acquisition cost was then used by the engineering consultant as an input to site selection.

SOURCES OF INFORMATION:

- OWMC 1:10,000 and 1:50,000 scale plans of site and vicinity
- Land acquisition costs as provided by Graydon Rodgers Appraisals Ltd.

COMMENTS ASSUMPTIONS/LIMITATIONS: Assumed that terrain is flat, a rolling terrain would incur additional grading costs. Additional grading may increase R.O.W. width to beyond 18.3 m. This will be determined during a later stage of site selection.

AREA OF STUDY: Railway access options.

FACTORS AND INDICATORS APPLIED TO

SITING OPTION COMPARISON
IN DETAILED COMPARATIVE ANALYSIS

FACTOR GROUPING:	FACTOR:
TRANSPORTATION RISK	TRANSPORTATION SAFETY; PROBABILITY OF TRANSPORT ACCIDENTS ALONG PROVINCE-WIDE ACCESS SYSTEM INVOLVING TRUCK TRAFFIC TO/FROM SITE

FACILITY COMPONENTS AFFECTED: All facilities.

DEFINITION OF FACTOR: The probability of transport accidents represents the relative risk of transporting wastes, additives and reagents, and inter-site transfers along the province-wide access system excluding the local and regional access route. The calculation is based on the annual all-vehicle accident rates along all routes used to travel from source sites to each receiver site excluding the preferred access route from the 400-series highways.

This factor uses the 10th year of site operation and involves the transport of 300,000 tonnes/annum of special wastes and required process additives and reagents.

RATIONALE/SIGNIFICANCE: This factor is one of a number of risk assessment components which will be applied to the siting option comparison in order to select the preferred site(s).

The probability of an accident is dependent upon the characteristics of the routes used.

INTERPRETATION/METHODOLOGY: By using historical data on all-vehicle accident rates along the system-wide access routes, it is possible to estimate the number of accidents which will involve trucks carrying special wastes and process materials. This estimation will be based on the current statistical relationship between all-vehicle accidents and truck accident involvement.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISK	TRANSPORTATION SAFETY: PROBABILITY OF TRANSPORT ACCIDENTS ALONG PROVINCE-WIDE ACCESS SYSTEM INVOLVING TRUCK TRAFFIC TO/FROM SITE

INDICATOR 1: The estimated number of OWMC site generated vehicles involved in accidents per year for each candidate receiver site and/or site combination involving the transportation of speical waste, additives and reagents, and inter-site transfers vehicles for non-integrated sites (excluding the local and regional access routes). The estimate is based upon the 10th year of OWMC operation; at this time 300 000 t/a of special wastes are anticipated to be received for treatment.

DEFINITION: This is the estimated number of transport accident involvements in both directions, along the province-wide access roads (excluding the preferred routes from 400-series highways to candidate sites), which could involve a truck accessing a site and carrying either special wastes, additives, reagents, or transferring processed waste between site components.

RATIONALE/SIGNIFICANCE: The estimated annual number of OWMC site generated vehicles involved in accidents is representative of the possibility of a spill along the access system.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications: all vehicle accident rates on Ontario Highways 1978-1982
- Appropriate Regional Municipalities: accident rates on Regional Roads 1980-1982
- Research on the relationship of all-vehicle accidents and truck transport accident involvement
- Forecasted truck movements on access system to candidate sites and between non-integrated sites

COMMENTS/ASSUMPTIONS/LIMITATIONS: Since current data relating truck accidents to all vehicle accidents on Ontario roadways is unreliable for this application, it has been necessary to estimate this relationship based on previous research into freeway accidents relating all vehicle accident involvement to truck accident involvement.

AREA OF STUDY: Siting option comparison.

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY: HAZARD BASED SPILL INDEX FOR SPECIAL WASTE, ADDITIVE AND REAGENT AND INTER-SITE TRANSFERS WHEN HAULING TO OR BETWEEN CANDIDATE SITES ALONG PROVINCE-WIDE ACCESS SYSTEM

FACILITY COMPONENTS AFFECTED: All facilities.

DEFINITION OF FACTOR: The probability of spills during the transportation of special waste, additives and reagents and inter-site transfers to or between candidate sites (excluding the local and regional access routes); based upon the tenth year of site operation, receipt of 300,000 t/a of special waste and the process additives and reagents to treat this quantity.

RATIONALE/SIGNIFICANCE: Two types of spills are considered during transportation to or between candidate receiver sites. Two separate indicators are defined for this factor.

INTERPRETATION/METHODOLOGY: Historical accident data on all-vehicle accident rates on the province-wide access route system (excluding the local and regional access routes) involved in the haulage to or between OWMC candidate sites is the basis of this calculation. Accident rates are adjusted for special waste, additive and reagent and inter-site transfer vehicle involvement in accidents.

Two indicators are considered, including spills resulting from accident involvement and those non-accident related, based upon the 10th year waste quantity of 300,000 t/a.

The spill frequencies for each type of commodity were estimated based upon the volume of each quantity received at a site, and the characteristics of the routes used to reach the site. Each spill frequency was multiplied by the hazard index (H.I.) associated with each commodity. The sum of the spill frequencies weighted by the hazard index was used in the comparative study to represent the transport safety for each site. The weighting used was developed by the risk consultant, as follows:

Commodity	Hazard Index
Special Waste:	10
Additives/Reagents:	1
Transfers:	1

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISKS	TRANSPORTATION SAFETY: HAZARD BASED SPILL INDEX FOR SPECIAL WASTE, ADDITIVES AND REAGENT, AND INTER-SITE TRANSFERS WHEN HAULING TO OR BETWEEN CANDIDATE SITES ALONG PROVINCE-WIDE ACCESS SYSTEM

INDICATOR 1: The annual number of special waste, additive and reagent and inter-site transfer spills on the province-wide access system, excluding the local and regional access route, as a consequence of vehicles involved in accidents; based upon the tenth year of operation, the receipt of 300,000 t/a of special waste and the process additives and reagents required to treat this quantity.

DEFINITION: Vehicles transporting special waste, additives and reagents and inter-site transfers to or between candidate sites may become involved in a motor vehicle accident producing a resultant spill. This estimated annual number of spills is the basis of this indicator.

RATIONALE/SIGNIFICANCE: Spills as a result of a transport accidents may pose a risk to the environment. The minimization of spills is desirable and when spills occur countermeasures to minimize effects are required.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipality all-vehicle accident rates by road links.
- Research on the relationship of all-vehicle accidents to truck transport accident involvement.
- Forecasted truck movements of special waste, additives and reagents and inter- site transfers hauling on the entire access system to or between candidate sites.
- Spill frequencies based on Pilorusso Research Associates Inc. data.
- Material hazard index as developed by Environ Corporation.

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator deals only with spills resulting from motor vehicle accidents to or between candidate receiver sites.

It is assumed that existing all-vehicle accident rates on road links will remain relatively constant as has been demonstrated over the past 15 years. The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor indentification sheet.

AREA OF STUDY: Siting option comparison.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION SAFETY: HAZARD BASED SPILL INDEX FOR SPECIAL WASTE, ADDITIVE AND REAGENT, AND INTER-SITE TRANSFERS WHEN HAULING TO OR BETWEEN CANDIDATE SITES ALONG PROVINCE-WIDE ACCESS SYSTEM

INDICATOR 2: The annual number of special waste, additive and reagent and inter-site transfer in-transit spills on the province-wide access system, excluding the local and regional access roads, but are non-motor vehicle accident related. The number of spills will be based upon the 10th year of site operation involving 300,000 t/a of special waste and the process additives and reagents required to treat this quantity.

DEFINITION: Vehicles transporting special wastes, additives and reagents and inter-site transfers to or between candidate receiver sites may suffer a non accident related mechanical fault resulting in the release of materials while travelling along the province-wide access system (excluding the local and regional access system). The estimated annual number of non-motor vehicle accident spills is the basis of this indicator.

RATIONALE/SIGNIFICANCE: Spills as a result of an equipment failure may pose a risk to the environment. The minimization of spills is desirable and when spills occur, countermeasures to minimize effects are required.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipality all-vehicle accident rates by road links
- Research on the relationship of all-vehicle accidents and truck transport accident involvement
- Forecasted truck movements of special wastes, additives and reagents and inter-site transfers hauling on access system to or between candidate sites
- Spill frequencies based on Pilorusso Research Associates Inc. data
- Material hazard index as developed by Environ Corporation.

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator deals only with spills occurring due to equipment failure and are non-motor vehicle accident related.

The minimization of truck transport haulage will also minimize the annual number of equipment failure spills. The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor identification sheet.

AREA OF STUDY: Siting option comparison.

FACTOR GROUPING:	FACTOR:
TRANSPORTATION RISK	TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS AND INTER-SITE TRANSFERS

FACILITY COMPONENT AFFECTED: All facilities.

DEFINITION OF FACTOR: The probability of spill and the potential risk to land uses and resources during the transportation of special waste, additives and reagents and inter-site transfers to or between candidate sites along the preferred local and regional access routes; based upon the tenth year of site operation, receipt of 300,000 t/a of special waste and the process additives and reagents to treat this quantity.

RATIONALE/SIGNIFICANCE: The local and regional access road system typically carries the largest concentration of vehicles accessing candidate site. As a result those receptors on, or adjacent to the routes are exposed to the largest risks associated with spills of materials involving the vehicles generated by the treatment facility. Two separate indicators are defined for this factor.

INTERPRETATION/METHODOLOGY: This factor is composed of several indicators from various disciplines, one of the indicators is related to transportation, this indicator represents the risks to road users associated with spills from OWMC site destined trucks on the local and regional access system.

The value for the indicator is calculated for each link on the access route by multiplying the spill frequency and hazard index by the Average Annual Daily Traffic (AADT) on the link. The link values were summed for the entire preferred local and regional route to provide an index representing each particular site.

The spill frequencies for the local access routes were weighted according to the relative hazard indices for each commodity transported. The weighting used was developed by the risk consultant, as follows:

Commodity	Hazard Index
Special Wastes	10
Additives/Reagents	1
Transfers	1

FACTOR GROUPING: TRANSPORTATION RISKS	**FACTOR:** TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS, AND INTER-SITE TRANSFERS

INDICATOR 1: The potential risk to road users due to the annual number of special waste, additive and reagent and inter-site transfer in-transit spills on the local and regional access route, based upon the tenth year of operation, the receipt of 300,000 t/a of special waste and the process additives and reagents required to treat this quantity.

DEFINITION: Vehicles transporting special waste, additives and reagents and inter-site transfers to or between candidate sites may become involved in a motor vehicle accident producing a resultant spill or spills may be caused by in-transit equipment failures. This estimated annual number of spills is then weighted by the hazard index and combined with the year 2000 AADT to reflect the risk to road users.

RATIONALE/SIGNIFICANCE: In-transit spills along the local and regional access roads may pose a risk to human health and the environment. The minimization of spills is desirable and when spills occur countermeasures to minimize effects are required.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipality all-vehicle accident rates by road links, existing traffic volumes and growth rates.

- Research on the relationship of all-vehicle accidents to truck transport accident involvement.

- Forecasted truck movements of special waste, additives and reagents and inter- site transfers hauling on the entire access system to or between candidate sites.

- Spill frequencies based on Pilorusso Research Associates Inc. data.

- Material hazard index as developed by Environ Corporation.

COMMENTS/ASSUMPTIONS/LIMITATIONS: It is assumed that existing all-vehicle accident rates on road links will remain relatively constant as has been demonstrated over the past 15 years. The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor indentification sheet.

AREA OF STUDY: Siting option comparison, and comparison of locations for the physical chemical treatment plants for partially integrated siting options.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING: TRANSPORTATION RISKS	**FACTOR:** TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS, AND INTER-SITE TRANSFERS

INDICATOR 2: Potential risk to population due to the annual number of special waste, additive and reagent, and inter site transfer spills on the local and regional access route; based upon the tenth year of operation, the receipt of 300,000 tonnes/annum of special waste and the process additives and reagents required to treat these wastes.

DEFINITION: This potential risk indicator is represented by a spill risk index which is the combination of the annual number of in-transit spills, the relative hazard of these spills, and the size of the population at the spill location which may be affected.

RATIONALE/SIGNIFICANCE: This risk index represents one area of potential transportation risk to human health along the local and regional access routes. It is desirable to select a siting option which minimizes these potential risks.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipalities for all-vehicle accident rates by road links
- Research on the relationship of all-vehicle accidents and truck transport accident involvement
- Forecasted truck movements of special wastes, additives and reagents and inter-site transfers haulage on access system to or between sites
- Spill frequencies based on Pilorusso Research Associates Inc. data
- Material hazard index as developed by Environ Corporation.
- Population along preferred local and regional access routes as identified by Institutes of Environmental Research.

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator deals with spills caused by motor-vehicle accidents, and those caused by other in-transit events.

The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor identification sheet.

The population data were divided into two zones of risk by the Institute of Environmental Research. In calculating the risk index values the population within 150 m of the roadway was assigned a relative weighting of 10 times that of the 150-500 m zone.

AREA OF STUDY: Siting option comparison, and comparison of locations for the physical chemical treatment plants for partially integrated siting options.

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISKS	TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS, AND INTER-SITE TRANSFERS

INDICATOR 3: Potential risk to sensitive community and recreation features due to the annual number of special waste, additive and reagent, and inter site transfer spills on the local and regional access route; based upon the tenth year of operation, the receipt of 300,000 tonnes/annum of special waste and the process additives and reagents required to treat these wastes.

DEFINITION: This potential risk indicator is represented by a spill risk index which is the combination of the annual number of in-transit spills, the relative hazard of these spills, and the number of sensitive community and recreation features at the spill location which may be affected.

RATIONALE/SIGNIFICANCE: This risk index represents one area of potential transportation risk to human health along the local and regional access routes. It is desirable to select a siting option which minimizes these potential risks.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipalities for all-vehicle accident rates by road links
- Research on the relationship of all-vehicle accidents and truck transport accident involvement
- Forecasted truck movements of special wastes, additives and reagents and inter-site transfers haulage on access system to or between sites
- Spill frequencies based on Pilorusso Research Associates Inc. data
- Material hazard index as developed by Environ Corporation.
- The number of sensitive community and recreation features along preferred local and regional access routes as identified by Institutes of Environmental Research.

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator deals with spills caused by motor-vehicle accidents, and those caused by other in-transit events.

The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor identification sheet.

The sensitive community and recreation features were divided into two zones of risk by the Institute of Environmental Research. In calculating the risk index values those features within 150m of the roadway were assigned a relative weighting of 10 times those in the 150-500 m zone.

AREA OF STUDY: Siting option comparison, and comparison of locations for the physical chemical treatment plants for partially integrated siting options.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING:	**FACTOR:**
TRANSPORTATION RISKS	TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS, AND INTER-SITE TRANSFERS

INDICATOR 4: Potential risk to sensitive hydrogeologic lands due to the annual number of special waste, additive and reagent, and inter site transfer spills on the local and regional access route; based upon the tenth year of operation, the receipt of 300,000 tonnes/annum of special waste and the process additives and reagents required to treat these wastes.

DEFINITION: This potential risk indicator is represented by a spill risk index which is the combination of the annual number of in-transit spills, the relative hazard of these spills, and the presence of sensitive hydrogeologic lands at the spill location which may be affected.

RATIONALE/SIGNIFICANCE: This risk index represents one area of potential transportation risk to environment along the local and regional access routes. It is desirable to select a siting option which minimizes these potential risks.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communications and Regional Municipalities for all-vehicle accident rates by road links
- Research on the relationship of all-vehicle accidents and truck transport accident involvement
- Forecasted truck movements of special wastes, additives and reagents and inter-site transfers haulage on access system to or between sites
- Spill frequencies based on Pilorusso Research Associates Inc. data
- Material hazard index as developed by Environ Corporation.
- The presence of sensitive hydrogeologic lands along preferred local and regional access routes as identified by Gartner Lee Associates Limited.

COMMENTS/ASSUMPTIONS/LIMITATIONS: This indicator deals with spills caused by motor-vehicle accidents, and those caused by other in-transit events.

The spills of different commodities are weighted according to their relative hazard index as shown on the overall factor identification sheet.

The sensitive community and recreation features were divided into two zones of risk by the Institute of Environmental Research. In calculating the risk index values those features within 150m of the roadway were assigned a relative weighting of 10 times those in the 150-500 m zone.

AREA OF STUDY: Siting option comparison, and comparison of locations for the physical chemical treatment plants for partially integrated siting options.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING: TRANSPORTATION RISKS	**FACTOR:** TRANSPORTATION RISK DUE TO SPILLS: RISK TO HUMAN AND ENVIRONMENTAL RECEPTORS ALONG LOCAL AND REGIONAL ACCESS ROADS DUE TO THE HAZARD BASED SPILL INDEX FOR THE TRANSPORT OF SPECIAL WASTES, ADDITIVES AND REAGENTS, AND INTER-SITE TRANSFERS

INDICATOR 5: Potential risk to surface water suitability due to the annual number of special waste, additive and reagent, and inter site transfer spills on the local and regional access route; based upon the tenth year of operation, the receipt of 300,000 tonnes/annum of special waste and the process additives and reagents required to treat these wastes.

DEFINITION: This potential risk indicator is represented by a spill risk index which is the combination of the annual number of in-transit spills, the relative hazard of these spills, and the number of sensitive community and recreation features at the spill location which may be affected.

RATIONALE/SIGNIFICANCE: Documentation in Gartner Lee Associates 1985c report Site Selection Process - Phase 4A: Selection of a Preferred Site(s) - Surface Water.

SOURCES OF INFORMATION: Documentated in Gartner Lee Associates Phase 4A report (Gartner Lee 1985c)

COMMENTS/ASSUMPTIONS/LIMITATIONS: Documented in Garnter Lee Associates Phase 4A report (Gartner Lee 1985c).

AREA OF STUDY: Siting option comparison, and comparison of locations for the physical chemical treatment plants for partially integrated siting options.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING:	FACTOR:
TRANSPORTATION RISK	TRANSPORTATION RISK DUE TO ACCIDENT INVOLVEMENT: RISK TO ROAD USERS ON THE LOCAL AND REGIONAL ACCESS ROADS DUE TO THE INVOLVEMENT IN ACCIDENTS OF TRUCKS CARRYING SPECIAL WASTES, ADDITIVES AND REAGENTS AND INTER-SITE TRANSFERS

FACILITY COMPONENTS AFFECTED: All facilities.

DEFINITION OF FACTOR: The probability of transport accidents and the potential risk to other road users represents the relative risk of transporting wastes, additives and reagents, and inter-site transfers along the local and regional access route. The calculation is based on the annual all-vehicle accident rates along all routes used to travel from the 400-series highways to each candidate site.

This factor uses the 10th year of site operation and involves the transport of 300,000 tonnes/annum of special wastes and required process additives and reagents and inter-site transfers.

RATIONALE/SIGNIFICANCE: This factor is one of a number of risk assessment components which will be applied to the siting option comparison in order to select the preferred site(s).

The probability of an accident is dependent upon the characteristics of the routes used.

INTERPRETATION/METHODOLOGY: By using historical data on all-vehicle accident rates along the local and regional access routes, it is possible to estimate the number of accidents which will involve trucks carrying special wastes and process materials. This estimation will be based on the current statistical relationship between all-vehicle accidents and truck accident involvement.

The value of the indicator is calculated for each link on the access route by multiplying the annual number of accidents on each link by the forecasted year 2000 background average annual daily traffic. The link values are summed for the entire preferred local and regional routes to provide an index representing each site.

OWMC PHASE 4A: FACTORS FOR SITE SELECTION

FACTOR GROUPING: TRANSPORTATION RISK	**FACTOR:** TRANSPORTATION RISK DUE TO ACCIDENT INVOLVEMENT: RISK TO ROAD USERS ON THE LOCAL AND REGIONAL ACCESS ROADS DUE TO THE INVOLVEMENT IN ACCIDENTS OF TRUCKS CARRYING SPECIAL WASTES, ADDITIVES AND REAGENTS AND INTER-SITE TRANSFERS

INDICATOR 1: Risk to road users associated with the OWMC generated traffic involved in accidents.

DEFINITION: This is an index value representing the risk to traffic on the roads in the event of a motor vehicle accident involving an OWMC site generated truck.

RATIONALE/SIGNIFICANCE: An accident involving an OWMC site generated truck may pose a risk to the other road users. The road's usage is represented by the road's year 2000 average annual daily traffic (ADDT), and the risk to the road user is expressed as the product of the AADT and the accident frequency on a road link.

SOURCES OF INFORMATION:

- Ontario Ministry of Transportation and Communication, and Regional Municipality all-vehicle accident rates, AADT's and growth factors by road links.
- Research on the relationship of all-vehicle accidents to truck transport accident involvement.
- Forecasted truck movements of special wastes, additives/reagents, and inter-site transfers on the access routes between the 400-series highway and the site entrance.
- Relative hazard indices for the three commodities transported to the OWMC site as indicated by Environs Limited data.

COMMENTS/ASSUMPTIONS/LIMITATIONS: It has been assumed that the existing all-vehicle accident rates on road links will remain relatively constant as has been demonstrated over the past 15 years.

The year 2000 AADT was estimated based on the growth factors supplied by the road agencies applied to the 1983 AADT's.

AREA OF STUDY: The preferred local and regional access routes between the 400-series highway and the site entrance and applied to the siting option comparison.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

RATIONALE FOR CHANGES TO PRELIMINARY TRANSPORTATION FACTORS/INDICATORS

		Type of Change Made To Preliminary Factors/Indicators				
Preliminary Phase 4A Factors/Indicators	Final Phase 4A Factor/Indicators Applied to Siting Option Comparison	Screened	Applied In Other Analysis Area	Additional Factor/ Indicator	Modified Factor/ Indicator	Comments
1. Accident probability and safety of all vehicles accessing the OWMC facility (along entire access system)	1. Probability of Transport Accidents along Province-Wide Access System Involving Truck Traffic to and from candidate sites				X	The entire access system was split into two study areas: the province-wide system (excludes routes between freeway and site), and the local and regional route (route from freeway to site).
° number of accidents per year	° estimated number of OWMC generated vehicles involved in accidents annually; 2-way travel				X	It was more precise to estimate the number of OWMC generated vehicles involved in accidents, rather than to estimate event occurrance.
° number of public intersections			X		X	This indicator was applied to the access route selection, and modified to represent the number of intersections where a turn occurs

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

RATIONALE FOR CHANGES TO PRELIMINARY TRANSPORTATION FACTORS/INDICATORS

Preliminary Phase 4A Factors/Indicators	Final Phase 4A Factor/Indicators Applied to Siting Option Comparison	Type of Change Made To Preliminary Factors/Indicators				Comments
		Screened	Applied In Other Analysis Area	Additional Factor/ Indicator	Modified Factor/ Indicator	
• peak hour v/c ratio			X			Applied in the access route selection stage.
• number of level rail crossings			X			Applied in the access road and rail option selection stage.
2. Probability of spills from vehicles carrying special waste to the OWMC facility	2. Hazard Based Spill Index for waste, additives and reagents, and inter-site transfers along province-wide access system				X	Access system split into two componentes province-wide, and local and regional access. Hazard based spill index provides a more comprehensive consideration of the relative hazards of the different materials.
• annual number of special waste spills as a result of a motor-vehicle accident	• annual hazard based spill index as a result of a motor vehicle accident				X	More comprehensive since it considers the relative hazard of the spilled material.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

RATIONALE FOR CHANGES TO PRELIMINARY TRANSPORTATION FACTORS/INDICATORS

		Type of Change Made To Preliminary Factors/Indicators				
Preliminary Phase 4A Factors/Indicators	Final Phase 4A Factor/Indicators Applied to Siting Option Comparison	Screened	Applied In Other Analysis Area	Additional Factor/ Indicator	Modified Factor/ Indicator	Comments
° annual number of in-transit special waste spills; non-accident related	° annual hazard based spill index as a result of a non-motor vehicle accident				X	See above comment.
	3. Risk to Road Users on Local and Regional Roads due to OWMC Generated Truck Accident Involvements			X		New factor/indicator developed to represent potential risk to road users due to accident involvements
	° road user risk index due to accident involvements			X		
	4. Risk to Human and Environmental Receptors along the Local and Regional Access Roads due to the Hazard Based Spill Index for all materials					New factor/ indicator developed to represent potential risk to human health and the environment due to a spill on the local and regional access roads.
	° risk to population			X		
	° risk to road users			X		
	° risk to sensitive land uses			X		
	° risk to surface water suitability			X		

APPENDIX E

TRANSPORTATION MODEL UPDATE

1. PURPOSE AND OBJECTIVES

This Appendix to the report will present the technical documentation for the transportation model update process used in Phase 4A of the OWMC study to select a preferred site(s) for the treatment and disposal of hazardous liquid industrial waste and solid waste (herein referred to as "special waste"). As a starting point for the model refinement, the results of the Phase 3B transportation model were used, M.M. Dillon Limited, Site Selection Process Phase 3B: Selection of Candidate Sites - Transportation, Appendix D (reference 1).

A major component of the modelling process is an Ontario-wide highway network developed during Phase 3 with the aid of MOTORS, a microcomputer transportation planning package. The main objectives for refining this model are:

- to produce an analytic tool for modelling access route selection from municipal area generation source points throughout Ontario to the candidate receiver sites;
- to use the model to assist in making operating cost comparisons among site options and for process options at the treatment facilities;

- to use the model to assist in calculating and comparing expected accident and spill frequencies for the transportation of special wastes, inter-site transfers, and process additives and reagents among site options.

2. OVERVIEW

The model, as taken from the Phase 3B of the site selection process, had to undergo some significant changes and refinements to be useful for the Phase 4A analysis. These changes and refinements included:

i) Aggregation of the municipal area source locations of waste;

ii) Identification of the candidate receiver-site locations;

iii) Inclusion of process reagent and additive sources;

iv) Travel speed modifications to link data;

v) Refinement of access travel routes.

Each of the above points will be discussed in more detail as to the source of information, purpose, methodology and application.

3. AGGREGATION OF THE SOURCE LOCATIONS OF WASTE

During Phase 3B the source points for Ontario's special waste were taken from a report by Proctor and Redfern Group, 1982 (reference 2). This earlier report identified 48 municipal regions as sources of special waste of which five areas were large geographical regions not centered on any one municipality. For the purposes of Phase 3B modelling only the 43 municipal regions were used (rationale detailed later in this section).

Subsequent work by OWMC staff and other consultants produced a refined set of source locations and waste quantities for use in Phase 4A. These new data were considered to be the best available and were authorized for use in Phase 4A site selection (reference 3).

This aggregation of source locations consisted of the consolidation of 19 of the 43 municipal regions; the inclusion of the five regional areas aforementioned, and the addition of four new source points. This brought the total number of source points to 33. Table 1 presents the names and locations of Phase 4A source areas and Table 2 a cross referenced list of how the consolidation of source areas occurred.

As a result of this consolidation 16 of the 33 source areas now include a larger geographic area and four of these zones - Toronto, St. Catharines/Niagara, Brantford and Timmins - required new and more representative zone centroids to model all trip movements from these sources. These four zones also accounted for the consolidation of 12 of the 19 municipal regions but the most significant consolidation occurred around the Toronto centroid which was expanded to include the municipal regions of King City (Aurora), Brampton, Milton (Halton Hills), Mississauga, Orangeville and Oakville.

The aggregation of source areas was accompanied by all the necessary changes to the highway network link data to update the transportation model and carry out the modelling process.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

MODEL NETWORK SPECIAL WASTE SOURCE LOCATIONS

MODEL ZONE No.	MUNICIPAL AREA	NETWORK SOURCE CENTROID LOCATIONS
1	Windsor	Hwy. 18 at junction of Hwy. 3
2	Brantford	Hwy. 24, 11 km south of Hwy. 53 at Scotland
3	St. Catharines/ Niagara Falls	Hwy. 406 at junction of Hwy. 20
4	Orillia	Hwy. 11 at junction of Hwy. 12
5	Midland	Hwy. 93 at Midland
6	Trenton	Hwy. 33 at junction of Hwy. 401
7	Timmins	Hwy. 101 at junction of Secondary Hwy. 655
8	Hamilton	Hwy. 20 at junction of Q.E.W.
9	Chatham	Hwy. 2 at junction of Hwy. 40
10	Other S.W.- Clinton	Hwy. 4 at junction of Hwy. 8
11	Sarnia	Hwy. 40 at junction of Hwy. 402
12	Other S.C. - Haliburton	Hwy. 121 at junction of Hwy. 118
13	Other S.E. - Renfrew	Hwy. 132 at junction of Hwy. 17
14	Other N.C.&E. - Trout Creek	Hwy. 11 at junction of Secondary Hwy. 522
15	Other N.W. - Geraldton	Hwy. 11 at junction of Secondary Hwy. 584
16	Thunder Bay	Hwy. 11B/17B at Thunder Bay
17	Barrie	Hwy. 400 at junction of Hwy. 26
18	London	Hwy. 2 at Hwy. 100 in London
19	Kitchener/ Waterloo	Hwy. 7 at junction of Hwy. 86
20	Toronto	Junction of Hwys. 400 and 401
21	Oshawa	Hwy. 401 at City of Oshawa
22	Guelph	Hwy. 7 at junction of Hwy. 6
23	Sault Ste. Marie	Hwy. 17 at junction of Secondary Hwy. 550
24	Stratford	Hwy. 7/8 at junction of Hwy. 19
25	Sudbury	Hwy. 17 at junction of Hwy. 69
26	Peterborough	Junction of Hwys. 7 and 28
27	North Bay	Hwy. 11 at junction of Hwy. 17 near North Bay
28	Belleville	Hwy. 401 at junction of Hwy. 37
29	Kingston	Hwy. 15 at junction of Hwy. 2 in Kingston
30	Brockville	Junction of Hwys. 401 and Hwy. 29
31	Owen Sound	Hwy. 6/10 at junction of Hwy. 26
32	Ottawa	Junction of Hwys. 417, 16 and 31
33	Cornwall	Junction of Hwys. 401 and 138
34	Beachville (additive source)	Hwy. 2 at Oxford R.R.6 near Ingersol

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

PHASE 3B to PHASE 4A SPECIAL WASTE SOURCE CROSS REFERENCING LIST

Phase 3B Proctor & Redfern Region[1]	Phase 4A Model Network Zones
1. Aurora (King City)	20. Toronto
2. Barrie	17. Barrie
3. Belleville	28. Belleville
4. Brampton	20. Toronto
5. Brantford	2. Brantford
6. Brockville	30. Brockville
7. Chatham	9. Chatham
8. Cobourg	12. Other S.C. - Haliburton
9. Cochrane	7. Timmins
10. Cornwall	33. Cornwall
11. Dunnville	3. St. Catharines-Niagara
12. Grimsby	8. Hamilton
13. Guelph	22. Guelph
14. Halton Hills (Milton)	20. Toronto
15. Hamilton	8. Hamilton
16. Hawkesbury	33. Cornwall
17. Huntsville	31. Owen Sound
18. Kirkland Lake	7. Timmins
19. Kingston	29. Kingston
20. Kitchener	19. Kitchener-Waterloo
21. Lindsay	12. Other S.C. - Haliburton
22. London	18. London
23. North Bay	27. North Bay
24. Mississauga	20. Toronto
25. Oakville	20. Toronto
26. Orangeville	20. Toronto
27. Oshawa	21. Oshawa
28. Ottawa	32. Ottawa
29. Owen Sound	31. Owen Sound
30. Peterborough	26. Peterborough
31. Sarnia	11. Sarnia
32. Sault Ste. Marie	23. Sault Ste. Marie
33. Simcoe	2. Brantford
34. St. Catharines	3. St. Catharines-Niagara
35. St. Thomas	18. London
36. Stratford	24. Stratford
37. Sudbury	25. Sudbury
38. ThunderBay	16. Thunder Bay
39. Toronto	20. Toronto
40. Walkerton	31. Owen Sound
41. Welland	3. St. Catharines-Niagara
42. Windsor	1. Windsor
43. Woodstock	2. Brantford
44. Other N.E.	14. Other N.C.&E. - Trout Creek
45. Other N.W.	15. Other N.W. - Geraldton
46. Other S.C.	12. Other S.C. - Haliburton
47. Other S.E.	13. Other S.E. - Renfrew
48. Other S.W.	10. Other S.W. - Clinton

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[1] Proctor & Redfern Group, Waste Quantities Study, August, 1982.

3.1 ADDITION OF REGIONAL SOURCE SITES

During Phase 3B of the site selection process it was considered unnecessary to include the waste quantities of all 48 waste producing regions as identified by Proctor & Redfern Group (reference 2). The five large regional areas, covering many hundreds of square kilometers, were identified for exclusion. These five regions produced a total of 2449 tonnes of waste per annum which represented only 1.6% of a total waste stream of 151 320 tonnes/ annum.

During Phase 4A a more precise and detailed evaluation of operating costs, accident and spill frequencies among siting options was necessary. These five areas were included here because in all cases the distances from source locations to receiver sites was quite substantial thereby making them necessary to produce a better estimate of the absolute costs and expected accident and spill frequencies. Furthermore, in two instances the consolidation of source areas occurred around the regional areas thereby increasing the waste quantity from these regions.

Appendix G to the Proctor & Redfern report "Groupings of Towns and Cities" lists each of the 48 municipal regions and all the constituent municipalities considered to generate waste at that point. To include the five regional areas in the highway network it was necessary to choose a central point (or zone centroid) for each region to represent all trip movement origins from that region to the receiver sites (see Table 1 for the centroid locations selected).

3.2 NEW SOURCE LOCATIONS

Four new source area locations were identified as part of the refined waste quantity and location data used in Phase 4A. Source location zones with their zone centroids were added to the highway network at Midland, Timmins, Trenton and Orillia. These additions were accompanied by the appropriate changes to the link data to update the network model.

3.3 CENTROID CONNECTORS

Centroid connectors are specially designated links used in the highway network to connect the OWMC zone centroids (waste source points and candidate receiver sites) to the Ontario-wide highway network. These links are identified separately because they represent the starting or ending points of all trips, for each of the zones in the network. They do not, however, represent actual road sections in the highway network with a known distance, operating speed and accident rate. Instead they are used to represent average intra-zonal movements.

For a municipal source area the zone centroid is intended to represent the municipality the zone is centered on, nearby municipalities and the outlying or surrounding area. Since the whole zone is represented by a single location (zone centroid) on the highway network and all movements from a zone are assumed to originate at that point, the centroid connector represents all other routes in the zone, and as such represents the average intra-zonal distance. In general the larger the area a zone represents, the longer the centroid connector distance should be; however, the size of the municipal area represented is not the only relevant criteria. It is the location of the waste producers that ultimately determine the trip movements. Since most waste is produced in urbanized areas with good access to the provincial highway system, the average intra-zonal distance may still be relatively short even though the zone centroid represents a relatively large geographic area.

Table 3 tabulates the municipal source areas and the distance assumed for each of the centroid connectors. These are viewed to be reasonable estimates only in that the intra-zonal travel distance is not calculable because the spatial array of special waste generators is unknown. In 1981 it was estimated that 16,000 industrial plants in Ontario produced special waste (reference 4). This large number of producers spread across Ontario makes it necessary to make simplifying assumptions about the location and average intra-zonal trip distance. The distances and associated travel times were used in the transport model for the transport cost calculations, the calculation of non-accident related in-transit spills and total vehicle kilometers of travel. They were not applied for the calculation of accident involvement frequency as no standard accident rate could be determined for the array of routes they represent. However, for purposes of site selection this missing element is common for all site option comparisons and does not materially affect the comparisons.

4. IDENTIFICATION OF CANDIDATE RECEIVER SITES

The results of Phase 3B of the OWMC site selection process identified eight candidate receiver sites that were suitable for supporting special waste treatment facilities.

The receiver "cluster" centroids used in the transportation model during Phase 3B were replaced with zone centroids that represented each individual site (see Table 4 and Figure 1). The highway network was adjusted to include the necessary additional road links to represent the "local and regional access routes" (as identified in Chapter 4) up to the site entrance. These links required accurate road distances, operating speeds and accident data within the overall highway access network to provide a good level of accuracy for the modelling process results.

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

SOURCE CENTROID CONNECTOR DISTANCE FOR ALL MUNICIPAL AREAS

Model Zone No.	Municipal Area	Source Centroid Connector Distance (km)
1	Windsor	8.0
2	Brantford	8.0
3	St. Catharines/Niagara Falls	8.0
4	Orillia	4.0
5	Midland	4.0
6	Trenton	4.0
7	Timmins	6.0
8	Hamilton	8.0
9	Chatham	6.0
10	Other S.W. - Clinton	5.0
11	Sarnia	6.0
12	Other S.C. - Haliburton	5.0
13	Other S.E. - Renfrew	5.0
14	Other N.C.&E. - Trout Creek	5.0
15	Other N.W. - Geraldton	5.0
16	Thunder Bay	8.0
17	Barrie	6.0
18	London	8.0
19	Kitchener/Waterloo	8.0
20	Toronto	15.0
21	Oshawa	8.0
22	Guelph	6.0
23	Sault Ste. Marie	6.0
24	Stratford	4.0
25	Sudbury	8.0
26	Peterborough	6.0
27	North Bay	6.0
28	Belleville	6.0
29	Kingston	1.0
30	Brockville	6.0
31	Owen Sound	6.0
32	Ottawa	8.0
33	Cornwall	6.0
34	Beachville (additive source)	2.0

OWMC PHASE 4A - TRANSPORTATION

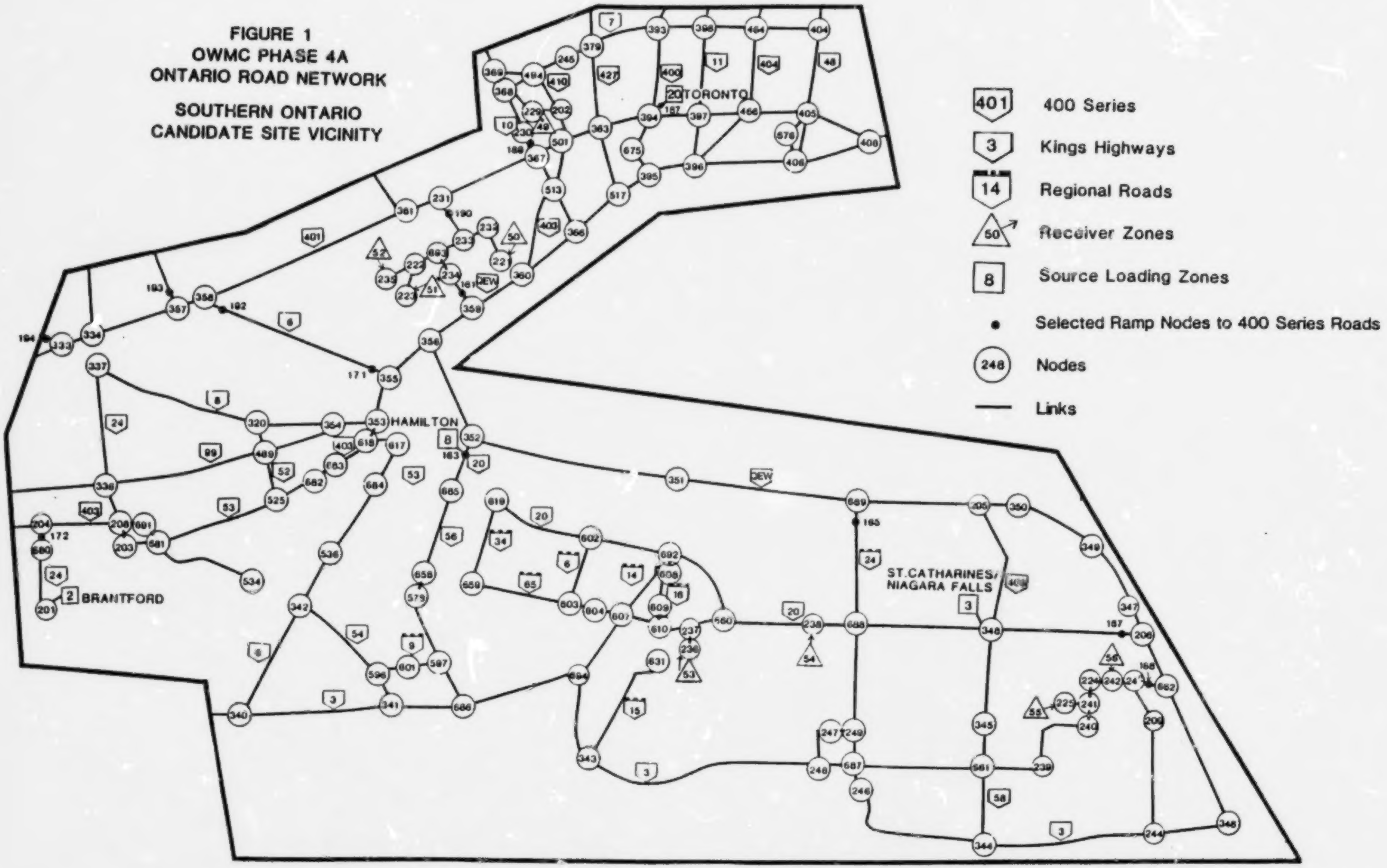
TABLE 4

RECEIVER SITE LOCATIONS

Model Zone No.	OWMC Candidate Site	Site Location
49	LF-2N	Derry Road and Highway 10; Mississauga
50	PI-13N	Fifth Line just south of Britannia; Milton
51	PI-1N	Britannia and Highway 25; Milton
52	LF-4N	Britannia and Tremaine Road; Milton
53	LF-3C	R.R. #16 and Elcho Road; West Lincoln
54	LF-9C	Highway 20 between R.R. #27 and R.R. #24 at Schram Road; West Lincoln
55	LF-1E	Crowland Avenue and Carl Road, just south of R.R. #47 and west of R.R. #98; Niagara Falls
56	PI-27E	R.R. #47 and R.R. #98; Niagara Falls

FIGURE 1
OWMC PHASE 4A
ONTARIO ROAD NETWORK

SOUTHERN ONTARIO
CANDIDATE SITE VICINITY


TORONTO
HAMILTON
BRANTFORD
ST.CATHARINES/
NIAGARA FALLS
401 400 Series
3 Kings Highways
14 Regional Roads
50 Receiver Zones
8 Source Loading Zones
Selected Ramp Nodes to 400 Series Roads
248 Nodes
Links

The centroid connectors associated with each candidate receiver site represented the on-site travel from the site road entrance up to the plant entrance. The distances used were based on the preliminary site layout and plant location plans provided by the engineering consultant (Monenco Ltd.)

Table 5 tabulates the receiver sites and the distance estimates attached to each of their centroid connectors. These distances were used in the transportation model for the transport cost calculation, but were not applied to the accident involvement or spill data because these data were only modelled up to the site entrance.

OWMC PHASE 4A - TRANSPORTATION
TABLE 5
RECEIVER SITE CENTROID CONNECTOR DISTANCE TO CANDIDATE SITES

Model Zone No.	OWMC Candidate Site	Receiver Site Centroid Connector Distance (km)
49	LF-2N - from Hwy. 10	0.4
	- from Derry Road	0.4
50	PI-13N	0.5
51	PI-1N - from Hwy. 25	0.5
	- from First Line	0.8
52	LF-4N	0.5
53	LF-3C	0.6
54	LF-9C	0.4
55	LF-1E	0.5
56	PI-27E	0.3

5. INCLUSION OF REAGENT AND ADDITIVE SOURCES

It was recognized during Phase 3B that the movement of process additive and reagent quantities required for treatment of special waste would form a significant part of the total transport cost and expected accident frequency for any facility site option. Preliminary work identified certain chemicals, quantities and source locations for the additives and reagent, but detailed estimates became available during Phase 4A after the preliminary facility design process was complete. Table 6 presents a list of chemicals, their physical state, quantity and probable source shipping location.

Quantities listed at less than 100 t/a were excluded from the modelling process because they would be relatively insignificant contributers to the total cost or accident frequency analysis.

The inclusion of the remaining additive source points into the highway network for modelling was relatively simple. All source points except one at Beachville, Ontario near Ingersoll, Ontario coincided with existing special waste source points. Therefore, only minor modifications to the highway link data were necessary.

For a further discussion of the highway network testing and building process and its development up to the end of Phase 3B, see The Report, M.M. Dillon Limited - Transportation (Reference 1).

6. TRAVEL SPEED MODIFICATIONS TO LINK DATA

The link data that makes up the OWMC Ontario highway network, as taken from Phase 3B, was based on two existing networks developed and tested by Ministry of Transportation and Communication. This Ontario-wide highway network was enhanced and updated to include the projected road improvements until 1988, the refined source location of waste and the receiver sites for the special waste.

OWMC PHASE 4A - TRANSPORTATION

TABLE 6

ADDITIVE AND REAGENT SOURCE LOCATIONS AND ANNUAL QUANTITIES[1]

Additive or Reagent	Physical State	Annual Quantity For Total Solidification	Shipping Location
For Physical Chemical and Solidification			
Cement	Powder	52700t	Mississauga
Sodium Silicate	Liquid	21700t	Etobicoke
Sulphar Dioxide	Liquid	100t	Cornwall
Chlorine[2]	Liquid	400t	Cornwall
Caustic Soda	50% Liquid	640t	Cornwall
Hydrated Lime	Solid	7400t	Toronto
Activated Carbon	Solid	100t	Hamilton
Nitrogen	Liquid	8000 Nm^3	Scarborough
For Incinerator Plant			
Caustic Soda	50% Liquid	5 600t	Cornwall
Calcium Oxide	Solid	2380t	Ingersoll
Nitrogen	Liquid	16000 Nm^3	Scarborough

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1. Source: Monenco Limited. 1985. Site Selection Process, Phase 4A: Selection of Preferred site(s) - Engineering.

2. An alternative chemical compound (sodium hypochlorite) to liquified chlorine is being considered by the engineering consultant.

Further, the speed attribute used for each link in the network was changed from the posted highway speed to a speed that more realistically reflected the actual or average driving time.

A separate study undertaken by Pilorusso Research Associates (1984) as a sub consultant to M.M. Dillon Limited, examined the relationship between average overall driving times for inter-city buses between points in Ontario and those developed in the model. The results indicated that a 12% decrease in the model travel times was necessary to account for time in which the vehicle is stopped for rest breaks, meals, etc.. To reflect this reduction in time in the model the speed attribute attached to each link was reduced by 12%.

The posted speeds used in the model development for Phase 3B were adequate because only relative indices were calculated, but Phase 4A analysis required more precise information to provide better estimates of transportation costs.

7. PREFERRED ROUTE REFINEMENT

The extensive modifications made to the highway network as a result of the refinement of source points and receiver sites during Phase 4A resulted in significant changes to the Phase 3B preferred routes. Other factors contributing to the refinement of routes included the desire to minimize travel through urbanized areas and to maximize the use of 400-series roads. These points are discussed in more detail as they relate to preferred route refinement.

7.1 REFINEMENT OF SOURCE POINTS

The consolidation of source points resulted in the deletion of 19 of the 43 source routes used during Phase 3B. This simplification was accompanied by the addition of nine new routes, four due to new sources and five due to the addition of the regional sources (See Section 3.0) and the modification of three other routes due to the relocation of the source centroid. Each of the routes were evaluated to ensure they coincided with the preferred route criteria.

7.2 REFINEMENT OF RECEIVER SITES

With the refinement of the location of each of the eight candidate receiver sites remaining in the site selection process, it was possible to model all routes from each Municipal source area up to the site entrance. Since the local and regional access routes were identified in a separate analysis, only those relevant links were included in the network to ensure they were chosen as part of the preferred route. Once the local and regional access routes were chosen it became necessary, in some instances, to remove the competing road links from the highway network to ensure that these less appropriate routings could not be selected. For example, the preferred crossing of the Niagara Escarpment en route to LF-3C and LF-9C is via Niagara Regional Road No. 24. In order to ensure its selection Regional Road No. 14 between the QEW and Highway 20 was removed from the network.

7.3 ALTERNATIVE ROUTES

During Phase 3B the preferred routes for the movement of special waste generally followed the minimum time routes. Where these routes were unacceptable, alternatives were investigated based on the following criteria:

- maximize the use of 400-series highways;
- minimize travel through urbanized areas.

These criteria have the combined effect of minimizing the environmental impact and the potential accident and spill frequencies while maintaining routes that generally minimize cost. With the inclusion of the revised special waste sources and candidate receiver sites during Phase 4A, it became possible to finalize the preferred route selection. It is emphasized that the results of the analysis were based on the most recent information regarding source points, candidate receiver sites and local and regional access routes.

Initially the routes were allowed to follow the minimum time paths on the updated Phase 3B highway network. These routes were then re-evaluated with greater emphasis on maximizing the use of 400-series highways and minimizing travel through populated areas. This evaluation identified both minor adjustments to selected routes and a substantial adjustment to the routes from southwestern Ontario en route to the candidate receiver sites in the Niagara Peninsula.

7.3.1 Brantford to all receiver sites

With the consolidation of the Simcoe, Woodstock and Brantford source points, the new zone centroid was adjusted to a location southwest of Brantford on King's Highway 24. To ensure that the minimum time route did not follow a path across the Niagrara Peninsula along Highway 3 to the central and east receiver sites, the link leading south from the zone centroid on Highway 24 was removed.

Following this adjustment, both the minimum time and distance routes utilized a section of Highway 53 passing directly through Brantford from Highway 24 to the junction with Highway 403 and 2. Since this route is undesirable an alternative was investigated and subsequently chosen that followed Highway 24A from the intersection of Highways 24/53/24A north to Highway 403 and then through Brantford on Highway 403. The alternative route was the preferred route because:

- it minimizes the time and distance on non-freeway routes in favor of the preferred Highway 403;
- it avoids travel through urban Brantford on Highway 53 at lower operating speeds, with more stops and starts and an increased exposure to population.

The results of this adjustment show that it is five minutes longer and 7 Km farther to each receiver site and is therefore a viable alternative.

7.3.2 Owen Sound to the LF-2N receiver site

The minimum time and distance route followed Highway 10 south through Brampton to the site entrance. A viable alternative that avoids urbanized sections of Brampton on Highway 10 follows the Highway 7 by-pass on the northern perimeter of the built up area to 410, then south to Derry Road and west to the site entrance. Although the route is slightly longer in both time and distance, it is an acceptable alternative because it has lower impacts from an environmental viewpoint.

7.3.3 Southwestern Ontario source points to receiver sites in the Niagara Peninsula

It was found that the minimum time route from the Windsor, Chatham, Sarnia, London and Brantford source points to the receiver sites in the Niagara Peninsula would follow a path along Highway 401 to Highway 403, continuing to Highway 53 along the southern perimeter of Hamilton and then east across the Niagara

Peninsula along Highway 20 to LF-9C and LF-3C; or north on Highway 20 from Highway 53 to QEW, then east to LF-IE and PI-27E candidate sites.

In order to maximize the use of 400-series highways and at the same time minimize travel through urbanized areas, the preferred route followed Highway 401, Highway 403, Highway 53, Highway 403 to QEW and around Hamilton towards Niagara Falls, to Regional Road 24 for the LF-3C and LF-9C receiver sites; and to Regional Road 47 for the PI-27E and LF-IE receiver sites. The MOTORS highway network was adjusted to ensure the preferred routes were followed. This included removing selected links from the network until the preferred routes coincided with the desired time routes.

The additional time and distance from the source points in southwestern Ontario to each of the receiver sites in the Niagara Peninsula can vary considerably. For travel to the LF-3C and LF-9C receiver site, the direction of approach is different between the "minimum time route" and the "preferred route" (one from the east and the other from the west). Other factors contributing to this variability include, the movement of some of the centroid locations, the addition of highway on-and-off ramps from King's Highway and Regional Roads to 400-series Highways and the consolidation of source points.

7.4 TRAVEL TIME AND DISTANCE METHODOLOGY

Once all the adjustments were made to update the transportation model including the refinement of the preferred routes, new computer outputs were produced giving the travel time and distance from each waste generation municipal area to each of the eight candidate receiver sites. The printout of these data are shown in Table 7 and Table 8, respectively.

OWMC PHASE 4A–TRANSPORTATION

TABLE 7

TRAVEL TIME FROM SOURCE SITES TO RECEIVER SITES (MINUTES)

MUNICIPAL AREA WASTE SOURCE SITE ZONES[2]	RECEIVER (CANDIDATE) SITES ZONE NUMBERS[1]							
	49	50	51	52	53	54	55	56
1	270	262	263	265	309	300	310	306
2	107	102	97	101	134	125	135	131
3	97	92	87	91	36	27	33	29
4	104	126	127	129	195	186	196	192
5	116	138	139	141	207	198	208	204
6	141	163	164	166	232	223	233	229
7	548	570	571	573	639	630	640	636
8	57	52	47	51	66	57	67	63
9	206	198	199	201	245	236	246	242
10	158	150	151	153	216	207	217	213
11	200	192	193	195	239	230	240	236
12	209	231	232	234	300	291	301	297
13	343	365	366	368	434	425	435	431
14	252	274	275	277	343	334	344	340
15	883	905	906	908	974	965	975	971
16	1057	1079	1080	1082	1148	1139	1149	1145
17	80	102	103	105	171	162	172	168
18	134	126	127	129	173	164	174	170
19	77	69	70	72	135	126	136	132
20	35	57	58	60	126	117	127	123
21	67	89	90	92	158	149	159	155
22	58	50	51	53	116	107	117	113
23	537	559	560	562	628	619	629	625
24	107	99	100	102	165	156	166	162
25	323	345	346	348	414	405	415	411
26	125	147	148	150	216	207	217	213
27	287	309	310	312	378	369	379	375
28	158	180	181	183	249	240	250	246
29	211	233	234	236	302	293	303	299
30	269	291	292	294	360	351	361	357
31	148	169	170	172	235	226	236	232
32	370	392	393	395	461	452	462	458
33	337	359	360	362	428	419	429	425

NOTES:

1. SEE TABLE 4 FOR RECEIVER SITE ZONE TO CANDIDATE SITE ASSOCIATION LISTING.
2. SEE TABLE 2 FOR SOURCE SITE ZONE TO MUNICIPAL AREA ASSOCIATION LISTING.

OWMC PHASE 4A–TRANSPORTATION

TABLE 8

DISTANCE FROM SOURCE SITES TO RECEIVER SITES (KILOMETRES)

RECEIVER (CANDIDATE) SITE ZONE NUMBERS[1]

MUNICIPAL AREA WASTE SOURCE SITE ZONES[2]	49	50	51	52	53	54	55	56
1	362	350	352	354	405	393	413	409
2	131	116	110	114	160	148	168	164
3	131	116	110	114	37	25	30	26
4	138	166	168	170	259	247	267	263
5	150	178	180	182	271	259	279	275
6	192	220	222	224	313	301	321	317
7	701	729	731	733	822	810	830	826
8	72	57	51	55	75	63	83	79
9	268	256	258	260	311	299	319	315
10	184	172	174	176	252	240	260	256
11	271	259	261	263	314	302	322	318
12	234	262	264	266	355	343	363	359
13	411	439	441	443	532	520	540	536
14	317	345	347	349	438	426	446	442
15	1194	1222	1224	1226	1315	1303	1323	1319
16	1421	1449	1451	1453	1542	1530	1550	1546
17	104	132	134	136	225	213	233	229
18	176	164	166	168	219	207	227	223
19	88	76	78	80	156	144	164	160
20	32	60	62	64	153	141	161	157
21	84	112	114	116	205	193	213	209
22	68	56	58	60	136	124	144	140
23	710	738	740	742	831	819	839	835
24	127	115	117	119	195	183	203	199
25	409	437	439	441	530	518	538	534
26	157	185	187	189	278	266	286	282
27	361	389	391	393	482	470	490	486
28	212	240	242	244	333	321	341	337
29	285	313	315	317	406	394	414	410
30	368	396	398	400	489	477	497	493
31	169	197	199	201	277	265	285	281
32	487	515	517	519	608	596	616	612
33	465	493	495	497	586	574	594	590

NOTES:

1. SEE TABLE 4 FOR RECEIVER SITE ZONE TO CANDIDATE SITE ASSOCIATION LISTING.
2. SEE TABLE 2 FOR SOURCE SITE ZONE TO MUNICIPAL AREA ASSOCIATION LISTING.

These distances and the associated waste quantities from each source point formed an integral part of the transportation cost comparison and accident and spill frequency analysis. These in turn provided essential inputs to the comparative evaluation of candidate sites as discussed elsewhere in this report.

REFERENCES

1. M.M. Dillon Limited. 1984. OWMC Site Selection Process, Phase 3B Selection of Candidate Sites - Transportation, 117 pp, Appendices.

2. Proctor and Redfern Group. 1982. Wastes Quantities Study, Prepared for OWMC, Toronto, Ontario.

3. OWMC. 9 May 1985. Memorandum from D.W. Heeney; Revised Waste Distribution - Scenario 2, enclosures (3).

4. OWMC. 1985. Site Selection Process. Phase 4A: Selection of a Preferred Site.

APPENDIX F

MODELLING ALTERNATIVE SCENARIOS

1. INTRODUCTION

The waste quantities scenarios represent a major input to the transportation modelling process. These scenarios are a maximum estimate of the amount of waste by source location and OWMC waste classification that would be treated at an OWMC facility operating at design capacity. During Phase 4A, two 300 000 t/a waste scenarios were developed by OWMC (reference 4), but only Scenario 2 was used to carry through the modelling process for the purposes of facility site selection.

The Scenario 1 waste stream (reference 6) was derived from the estimated Ontario-wide total waste stream (see Table 1). It assumes that each of the 33 municipal area source generation locations would send a portion of their waste to an OWMC receiver site, even if an existing treatment facility is closer. This scenario (see Table 2) does not take into account the effect that competing facilities will have on the special waste distribution to be received at an OWMC treatment facility.

By assuming that haul distance and competing opportunities do not affect the decision to send waste to an OWMC facility, Scenario 1 represents one extreme of the transportation requirement. Scenario 2 represents the other extreme by assuming a

OWMC PHASE 4A - TRANSPORTATION

TABLE 1: ESTIMATED ONTARIO TOTAL WASTE BY CLASS AND LOCATION

LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
KITCHENER	10007	763	993	0	8695	26819	175	1089	117	30	17540	3	4	260	66495
BRANTFORD	2973	294	299	0	2808	10401	75	437	19	12	7405	1	1	109	24834
GUELPH	2868	283	280	0	2709	10034	72	422	18	12	7144	1	1	105	23957
STRATFORD	1609	159	161	0	1519	5629	40	236	10	6	4007	0	0	59	13435
LONDON	2616	678	746	0	6652	15390	113	935	16	11	6392	1	2	132	33684
CHATHAM	1539	152	154	0	1453	5384	39	226	10	6	3833	0	0	56	12852
WINDSOR	5408	2278	1956	0	23957	49700	131	3483	33	22	12902	2	8	381	100261
SARNIA	2586	664	867	0	4324	21915	189	5749	5	69	9906	7	0	218	46499
OTHER SOUTH-WEST	3358	332	338	0	3171	11748	85	494	21	14	8363	1	1	123	28049
HAMILTON	6000	690	1352	0	8651	107761	183	865	37	25	176664	2	65	259	302554
ST CATHARINES-NIAGARA	3978	1319	1253	0	14203	45567	96	2007	24	16	38147	1	16	250	106877
TORONTO	20157	9558	7725	2	68052	167620	3092	19735	143	346	158693	37	30	2214	457404
OSHAWA	3101	1001	1522	0	19085	37233	73	2760	18	12	7238	1	6	270	73120
OWEN SOUND	351	36	43	0	331	1254	8	71	3	1	875	0	0	13	2986
BARRIE	1364	135	137	0	1288	4772	34	200	8	5	3397	0	0	50	11390
ORILLIA	419	41	42	0	396	1468	10	61	2	1	1045	0	0	15	3500
MIDLAND	384	38	38	0	363	1346	9	56	2	1	958	0	0	14	3209
KINGSTON	594	58	71	0	561	2080	15	131	3	2	1481	0	0	22	5018
BELLEVILLE	1049	103	105	0	991	3671	26	154	6	4	2613	0	0	38	8760
PETERBOROUGH	3812	377	383	0	3601	13338	96	561	24	16	9496	1	2	140	31847
TRENTON	419	41	42	0	396	1468	10	61	2	1	1045	0	0	15	3500
OTHER SOUTH-CENTRAL	4442	439	447	0	4195	15541	112	653	28	19	11064	2	2	163	37107
NORTH BAY	1119	110	112	0	1057	3916	28	164	7	4	2787	0	0	41	9345
SUDBURY	2514	248	327	0	2684	19840	63	365	16	10	26875	1	9	97	53049
SAULT STE-MARIE	742	72	263	0	1488	30633	16	97	4	2	54174	0	20	40	87551
THUNDERBAY	874	697	430	0	827	3071	24	1984	19	3	29405	0	0	32	37366
TIMMINS	1399	138	140	0	1321	4895	35	205	9	6	3484	0	0	51	11683
OTHER NORTH-EAST	3358	332	338	0	3171	11748	85	494	21	14	8363	1	1	123	28049
OTHER NORTH-WEST	1119	110	112	0	1057	3916	28	164	7	4	2787	0	0	41	9345
CORNWALL	349	278	172	0	330	1228	9	793	7	1	11762	0	0	12	14941
OTTAWA	2065	342	224	0	1949	7423	358	308	13	8	5140	0	1	103	18014
BROCKVILLE	1154	114	116	0	1090	4038	29	169	7	5	2875	0	0	42	9639
OTHER SOUTH-EAST	7800	772	785	0	7367	27289	198	1147	50	33	19428	3	4	287	65163
TOTAL WASTE	101527	23452	21981	2	199742	678136	5556	46276	709	721	657288	65	173	5855	1741483

SOURCE: OWMC REFERENCE 6.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2: SCENARIO 1 - 300,000 t/a OF SPECIAL WASTE BY CLASS AND LOCATION

DILLON ZONE #	LOCATION	WASTE CLASS														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
1	WINDSOR	1992	263	114	0	895	12921	38	462	23	49	1178	4	3	246	18189
2	BRANTFORD	1095	34	17	0	105	2704	22	58	13	27	676	2	0	70	4824
3	ST CATHARINES-NIAGARA	1465	152	73	0	531	11847	28	266	17	36	3482	2	6	161	18067
4	ORILLIA	154	5	2	0	15	382	3	8	1	2	85	0	0	10	678
5	MIDLAND	141	4	2	0	14	350	3	7	1	2	87	0	0	9	622
6	TRENTON	154	5	2	0	15	382	3	8	1	2	95	0	0	10	678
7	TIMMINS	515	16	8	0	49	1273	10	27	6	3	318	0	0	33	2269
8	HAMILTON	2210	80	79	0	323	28017	53	115	26	55	16127	4	26	167	47283
9	CHATHAM	567	18	9	0	54	1400	11	30	7	13	350	0	0	36	2495
10	OTHER S.W.-CLINTON	1237	38	20	0	119	3054	25	65	15	31	763	2	0	141	5449
11	SARNIA	953	77	51	0	162	5698	55	762	4	153	904	15	0	141	8973
12	OTHER S.C.-HALIBURTON	1636	51	26	0	157	4040	32	87	20	42	1010	4	1	105	7212
13	OTHER S.E.-RENFREW	2873	89	46	0	275	7095	57	152	35	73	1773	6	2	185	12663
14	OTHER NC.&E-TROUT CREEK	1237	38	20	0	119	3054	25	65	15	31	763	2	0	79	5449
15	OTHER N.W.-GERALDTON	412	13	7	0	40	1018	8	22	5	9	254	0	0	26	1814
16	THUNDER BAY	322	80	25	0	31	798	7	263	13	7	2684	0	0	21	4252
17	BARRIE	502	16	8	0	48	1241	10	27	6	11	310	0	0	42	2210
18	LONDON	964	78	44	0	249	4001	33	124	11	24	583	2	1	85	6199
19	KITCHENER/WATERLOO	3686	88	58	0	325	6973	51	144	83	67	1601	6	2	168	13251
20	TORONTO	7425	1102	452	1000	2543	43546	897	2616	101	768	14486	80	12	1429	76492
21	OSHAWA	1142	208	89	0	713	9680	21	366	13	27	661	2	2	174	13098
22	GUELPH	1056	33	17	0	101	2609	21	56	13	27	652	2	0	68	4655
23	SAULT STE. MARIE	273	8	15	0	56	7964	5	13	3	4	4945	0	8	26	13321
24	STRATFORD	593	18	9	0	57	1463	12	31	7	13	366	0	0	38	2608
25	SUDBURY	926	29	19	0	100	5158	18	48	11	22	2453	2	4	63	8854
26	PETERBOROUGH	1404	43	22	0	135	3468	28	74	17	36	867	2	1	90	6187
27	NORTH BAY	412	13	7	0	40	1018	8	22	5	9	254	0	0	26	1814
28	BELLEVILLE	386	12	6	0	37	954	8	20	4	9	239	0	0	25	1700
29	KINGSTON	219	7	4	0	21	541	4	17	2	4	135	0	0	14	969
30	BROCKVILLE	425	13	7	0	41	1050	8	22	5	11	262	0	0	27	1072
31	OWEN SOUND	129	4	3	0	12	326	2	9	2	2	80	0	0	8	579
32	OTTAWA	761	39	13	0	73	1930	104	41	9	18	469	0	0	118	3575
33	CORNWALL	129	32	10	0	12	319	3	105	5	2	1074	0	0	8	1699
	TOTAL WASTE	37400	2705	1285	1000	7465	176308	1612	6135	500	1600	60000	140	70	3780	300000

SOURCE: OWMC REFERENCE 6.

geographic oriented waste distribution that is sensitive to travel distances between waste courses and treatment sites.

An essential component in the modelling process was the calculation of vehicle movements from each source locations to the appropriate receiver candidate site or site combination. This required the special waste to be disaggregated into quantities that can be shipped to the same treatment facility and in similar vehicle types.

The transportation characteristics of the Scenario 1 waste distribution were developed and applied as part of an analysis with Scenario 2 to display the differences between the two and how it may have affected the site selection process (see Appendix I).

The Scenario 2 waste distribution, its disaggregation and subsequent conversion to vehicle movements will be discussed in more detail as to the sources of information, methodological application and results.

2. WASTE SCENARIO 2

The Scenario 2 waste stream was derived based upon the estimated Ontario total waste stream by class and location (Table 1) and the waste quantity totals from each of the fourteen OWMC classes developed for a 300 000 t/a waste scenario (see Table 2). Further, it takes account of the finding that Tricil is the only other major waste treatment facility in Ontario (reference 5).

Waste Scenario 2 was composed of three waste scenario subsets, each of which was specific to the geographical area in which the candidate waste treatment sites were located, i.e. Milton, Mississauga and West Lincoln/Niagara Falls. The Scenario 2 - Mississauga data subset has been excluded, as it was not applied as a result of basic acceptability issues at candidate site LF-2N as discussed in Chapter 6 of the Dillon Ltd. - Transportation Report (reference 1). The rationale for dropping candidate site LF-2N is reported in, Dillon Ltd. - Candidate Site LF-2N (reference 2) and Dillon Ltd. - Site Selection (reference 3). Consequently, the data included pertains to the Milton and West Lincoln/Niagara Falls data subsets.

These scenarios were constructed in the following manner (reference 6 and 9):

1. Source locations closer to Tricil in Sarnia than to an OWMC candidate receiver site, send no waste to OWMC.

2. If after step 1 the generated waste remaining in an OWMC class was less than the total for that class shown in Table 2, then the waste from those sources which were closest to the mid-point between Sarnia and the OWMC receiver site were reinserted until the OWMC class total was achieved.

3. If after step 1 the generated waste remaining in a class was greater than the total for that class shown in Table 2, then the municipal generation areas farthest from an OWMC site were assumed to send no waste to OWMC.

Since the receiver sites are geographically dispersed, the distance to the competing treatment facilty varies among candidate receiver sites. This, in turn, affects the distribution of waste that an OWMC candidate facility receives. Based on the methodology for constructing this waste scenario, Tables 3 and 4 present a unique waste distribution for the following site area subsets.

- Milton: LF-4N, PI-1N, PI-13N (see Table 3)
- West Lincoln/Niagara Falls: LF-3C, LF-9C, LF-1E, PI-27E (see Table 4)

3. DISAGGREGATION OF WASTE

The two waste distributions included under Scenario 2 were disaggregated by an organic/inorganic and physical state breakdown provided by 14 OWMC waste classes and by municipal areas. The basis for this disaggregation was the waste quantities and characteristics for a 300,000 t/a facility as provided by Monenco Limited (reference 7) and developed from the waste profile provided by OWMC. The purpose of the disaggregations was the development of waste quantities by municipal area and form of waste (organic/inorganic and physical state) to permit the calculation of vehicle movements.

For the Phase 4A analysis 33 municipal source generation areas of waste were used, as opposed to the 48 areas as developed and applied during Phase 3B. The 33 areas are an aggregation of the 48 areas as discussed in more detail in Appendix E.

3.1 QUANTITIES OF ORGANICS AND INORGANICS

Initially, the 300 000 t/a scenarios were disaggregated into organic and inorganic matrices for each municipal area location.

OWMC PHASE 4A - TRANSPORTATION

TABLE 3: MILTON SITE AREA GROUPING

SCENARIO 2 - PI-13N, PI-1N AND LF-4N

RECEIVER ZONE 50, 51 AND 52

300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	10	16	0	0	0	59	85
3	ST CATHARINES-NIAGARA	0	0	0	0	0	0	0	0	24	43	0	3	0	250	320
4	ORILLIA	0	0	0	0	0	0	0	0	2	3	0	0	0	15	20
5	MIDLAND	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
6	TRENTON	0	0	0	0	0	0	0	0	2	3	0	0	0	0	5
7	TIMMINS	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16
8	HAMILTON	6000	0	0	0	0	8688	0	0	37	67	0	5	40	259	15096
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	21	0	0	0	0	123	144
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	28	51	0	5	0	0	84
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	88	0	8	0	0	96
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	17	37	0	3	0	0	57
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8
17	BARRIE	0	0	0	0	0	0	0	0	8	13	0	0	0	50	71
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	8375	0	0	0	0	0	0	0	117	80	0	8	0	260	8840
20	TORONTO	20157	2705	1285	1000	7465	167620	1612	6135	143	924	60000	96	30	2214	271386
21	OSHAWA	0	0	0	0	0	0	0	0	18	32	0	3	0	270	323
22	GUELPH	2868	0	0	0	0	0	0	0	18	32	0	3	0	105	3026
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
24	STRATFORD	0	0	0	0	0	0	0	0	19	32	0	3	0	109	163
25	SUDBURY	0	0	0	0	0	0	0	0	0	27	0	3	0	0	30
26	PETERBOROUGH	0	0	0	0	0	0	0	0	24	43	0	3	0	66	136
27	NORTH BAY	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11
28	BELLEVILLE	0	0	0	0	0	0	0	0	6	11	0	0	0	0	17
29	KINGSTON	0	0	0	0	0	0	0	0	3	5	0	0	0	0	8
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13
31	OWEN SOUND	0	0	0	0	0	0	0	0	3	3	0	0	0	0	6
32	OTTAWA	0	0	0	0	0	0	0	0	0	21	0	0	0	0	21
33	CORNWALL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
	TOTAL UCD WASTE	37400	2705	1285	1000	7465	176308	1612	6135	500	1600	60000	140	70	3780	300000

SOURCE: OWMC REFERENCE 9

OWMC PHASE 4A - TRANSPORTATION

TABLE 4: NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPING

SCENARIO 2 - LF-3C, LF-9C, LF-1E AND PI-27E | RECEIVER ZONES 53, 54, 55 AND 56 | 300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	19	32	0	3	0	109	163
3	ST CATHARINES-NIAGARA	3978	1319	1253	0	7465	45567	96	2007	24	43	38147	3	16	250	100168
4	ORILLIA	0	0	0	0	0	0	0	0	2	3	0	0	0	15	20
5	MIDLAND	0	0	0	0	0	0	0	0	2	3	0	0	0	14	19
6	TRENTON	0	0	0	0	0	0	0	0	2	3	0	0	0	15	20
7	TIMMINS	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16
8	HAMILTON	6000	690	32	0	0	107761	183	865	37	67	21853	5	54	259	137806
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	28	51	0	5	0	28	112
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	89	0	8	0	0	97
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	21	38	0	3	0	0	62
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8
17	BARRIE	0	0	0	0	0	0	0	0	8	13	0	0	0	50	71
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	4397	0	0	0	0	0	0	0	117	81	0	8	0	260	4863
20	TORONTO	20157	413	0	1000	0	12946	1261	2841	143	934	0	93	0	2214	42002
21	OSHAWA	0	0	0	0	0	0	0	0	18	32	0	3	0	270	323
22	GUELPH	2868	283	0	0	0	10034	72	422	18	32	0	3	0	105	13837
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	11	27	0	3	0	0	41
26	PETERBOROUGH	0	0	0	0	0	0	0	0	24	43	0	3	0	140	210
27	NORTH BAY	0	0	0	0	0	0	0	0	7	11	0	0	0	0	18
28	BELLEVILLE	0	0	0	0	0	0	0	0	6	11	0	0	0	38	55
29	KINGSTON	0	0	0	0	0	0	0	0	3	5	0	0	0	0	8
30	BROCKVILLE	0	0	0	0	0	0	0	0	7	13	0	0	0	0	20
31	OWEN SOUND	0	0	0	0	0	0	0	0	3	3	0	0	0	13	19
32	OTTAWA	0	0	0	0	0	0	0	0	0	22	0	0	0	0	22
33	CORNWALL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
	TOTAL WASTE	37400	2705	1285	1000	7465	176308	1612	6135	500	1600	60000	140	70	3780	300000

SOURCE: OWMC REFERENCE 9

location. This essentially separated the shipments that would be made under the OWMC's "Case 3" (separate incinerator) between the two sites. For the most part, the organic waste will be sent to the PI site (the incinerator) with the inorganic waste going to the LF site containing the physical chemical treatment plant. Of the 14 OWMC waste classes, 6, 10 and 11 are defined as inorganic while the remainder are organic.

These fourteen waste classes were derived based upon the University of California at Davis (UCD) system for classifying waste. The UCD categories were grouped into classes having similar physical and chemical characteristics and general treatment requirements. The following list identifies the fourteen OWMC waste classes:

1. Organic Sludges and Still Bottoms
2. Solvent and Organic Solutions
3. Oil and Grease
4. Oil and Water Mixture
5. Organic and Oily Residue
6. Heavy Metal Solutions and Residuals
7. Paints and Organic Residuals
9. Aqueous Solution with Organics
10. Anion Complexes
11. Sludges and Inorganic Residuals
12. Pesticides and Herbicides
13. PCB Waste
14. Clean-up Residuals

Source: Reference 7

3.2 PHYSICAL STATE BREAKDOWN

The inorganic and organic matrices were then further disaggregated by municipal area location into pumpables (liquids and slurrys) and non-pumpables (solids). The purpose for this disaggregation was the selection of suitable transport equipment types to haul these wastes.

The disaggregation process resulted in the waste matrices being split into four groupings, by waste class and location, for conversion to truck movements.

The following listing presents the OWMC waste classes that make up each waste grouping.

Waste Grouping	OWMC Class Numbers
Organic Pumpable Waste	1, 2, 3, 4, 5, 7, 8, 9, 12, 13
Organic Non-pumpable Waste	1, 14
Inorganic Pumpable Waste	6, 10, 11
Inorganic Non-pumpable Waste	6, 11

Source: Reference 7

Waste class 1 (organic waste) and, 6 and 11 (inorganic waste) contain both pumpable and non-pumpable waste. For these waste classes the quantities produced by each municipal area are split in the same proportion as the make up of the entire waste class, with the relevant waste quantities applied to the appropriate disaggregated waste grouping.

The implicit assumption here is that the proportional split between pumpables and non-pumpables for the entire waste class holds true for the individual municipal area. This was a necessary assumption since more detailed information about the quantities and type of waste by municipality or individual producer was not available.

3.3 ADJUSTMENT TO THE DISAGGREGATED WASTE QUANTITIES

Based on Monenco's Phase 4A Engineering Report (reference 7) for Case 3 and 300 000 t/a of special waste, it was found that there was 4092 t/a of organic pumpable waste (sludge) arriving at the incinerator on the PI site that should, in fact, be treated with the inorganic pumpable waste arriving at the physical/chemical plant on the LF site (see Table 5). Although this adjustment changes the treatment facility where the 4092 t/a of waste is initially treated for all three operating cases (from the incinerator to the physical/chemical plant), it is of significance only to the modelling of Case 3 options because under Cases 1 and 2 the incinerator and physical/chemical plant are located on the same site and consequently, all untreated special waste is shipped to the same site. The disaggregated waste quantity for the affected waste groupings were adjusted to conform. The 4092 t/a of waste was distributed among the 33 municipal source areas on a pro rata basis.

4. CONVERSION TO VEHICLE MOVEMENTS

Based upon the disaggregation of waste by municipal location and waste class, a methodology was developed and applied in the calculation of vehicle movements to an OWMC integrated candidate site/or partially integrated siting option.

OWMC PHASE 4A - TRANSPORTATION
TABLE 5
ADJUSTMENT TO THE DISAGGREGATED WASTE QUANTITIES ASSOCIATED WITH THE 300 000 T/A OF SPECIAL WASTE - CASE 3[1]

Waste Group	Waste Quantity Before Adjustment	Organic Waste Adjustment	Waste Quantity After Adjustment
Organic Pumpable	31 872	-4092	27 780
Organic Non-pumpable	30 220		30 220
TOTAL to I @ PI Site	62 092	-4092	58 000
Inorganic Pumpable	180 908	+4092	185 000
Inorganic Non-pumpable	57 000		57 000
TOTAL to P/C @ LF Site	237 908	+4092	242 000

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1. Source: Monenco Limited. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

4.1 WASTE ARRIVING IN DRUMS

For the purposes of the modelling process, it was assumed that 3% of the special waste would arrive in 0.2 t/drum containers (reference 7). Therefore, for each of the disaggregated waste matrices, by the 33 source locations, the quantity of drummed waste was calculated and converted to vehicle movements. Partial loads were rounded upward to represent a truck shipment.

4.2 TRUCK SIZE AND LOAD SIZE

To calculate the number of special waste truck movements that would result, it was necessary to make assumptions about vehicle types, capacities and actual load sizes. This information was developed from Ministry of the Environment (MOE) waybill data resulting from a study conducted by Pilorusso Research Associates (reference 10). The vehicle types, capacities and load sizes adopted are tabulated in Table 6.

OWMC PHASE 4A - TRANSPORTATION
TABLE 6
VEHICLE TYPES, CAPACITIES AND LOAD SIZE FOR SPECIAL WASTE HAULING

	SPECIAL WASTE		
	Pumpable	Non-pumpable	Drums
Truck Size	18 tonnes (3-axle tanker)	24 tonnes (3-axle lugger/dump)	9 tonnes (flatbed/van)
Load Size	15 tonnes	18 tonnes	9 tonnes (43 drums x 0.2 tonnes)

Current waste treatment practice precludes the mixing of different waste streams in order to top up partially loaded trucks. This implies that some special waste trucks will have to haul at less than full capacity where quantities of a particular waste class are limited.

This practice brings to light a limitation in the methodology for calculating vehicle requirements. As previously mentioned the waste distribution, by municipal area and class, were disaggregated into four waste groupings for conversion to truck movements. This was accomplished by adding, within one of the four waste groupings and for each municipal area, the waste quantities from each waste class and converting that total to vehicle movements.

The summation of waste quantities, prior to the conversion to vehicle movements, tends to underestimate the truck movements by allowing for only one partially loaded truck from each municipal area, for each of the four disaggregated groupings. Since topping up partially loaded trucks is not practiced, the calculation of the number of trucks could have been carried out for each waste class by municipal area. This would produce a slight increase in the number of truck movements required because more than one partially loaded truck might be required from each municipal area.

This limitation was viewed to have little if any bearing on the outcome of the site selection process and was not adjusted directly because measures had been taken within the modelling process to counteract this limitation and others that arise from incomplete information of waste quantity, and type by individual producers. An average load size that was less than the assumed truck capacity was adopted, based on industry practice using waybill data (reference 11), for calculating truck movements.

This average load represents some trucks transporting waste at or close to capacity while others may transport at substantially below capacity because waste quantities from a municipal area and/or class are insufficient to attain full capacity loads.

7. RESULTS

The analyses undertaken were based on the assumptions and methodologies detailed in this appendix. Tables 7 to 14 present the disaggregated waste matrices, including the truck movements, for the Milton and West Lincoln/Niagara Falls site area groupings. These results are applied in Chapter 8 of the body of this report. Table 15 summarizes all of the disaggregated vehicle matrices and presents the total special waste vehicle movements to each candidate site.

It is emphasized that these data were considered to be the best available and were adopted for use in Phase 4A site selection.

OWMC PHASE 4A - TRANSPORTATION

TABLE 7: MILTON SITE AREA GROUPING   SCENARIO 2 - PI-13M, PI-1M AND LF-4M   RECEIVER ZONES 50, 51 AND 52   ORGANIC PUMPABLE WASTE TO INCINERATOR LESS AMOUNT GOING DIRECTLY TO P/C   300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL ORGANIC PUMPABLE WASTE	TOTAL WASTE TO PI SITE	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10	9	1	1	2
3	ST CATHARINES-NIAGARA	0	0	0	0	0	0	0	0	24	0	0	3	0	0	27	24	1	2	3
4	ORILLIA	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	1	2
5	MIDLAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	TRENTON	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	1	2
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	1758	0	0	0	0	0	0	0	37	0	0	5	40	0	1840	1604	6	104	110
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	21	0	0	0	0	0	21	18	1	2	3
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	28	0	0	5	0	0	33	29	1	2	3
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	7	1	1	2
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	17	0	0	3	0	0	20	17	1	2	3
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	7	1	1	2
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	2454	0	0	0	0	0	0	0	117	0	0	8	0	0	2579	2240	8	146	154
20	TORONTO	5907	2705	1285	1000	7465	0	1612	6135	143	0	0	96	30	0	26378	22991	77	1487	1564
21	OSHAWA	0	0	0	0	0	0	0	0	18	0	0	3	0	0	21	18	1	2	3
22	GUELPH	840	0	0	0	0	0	0	0	18	0	0	3	0	0	861	750	3	49	52
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	19	0	0	3	0	0	22	19	1	2	3
25	SUDBURY	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	1	1	2
26	PETERBOROUGH	0	0	0	0	0	0	0	0	24	0	0	3	0	0	27	24	1	2	3
27	NORTH BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BELLEVILLE	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	5	1	1	2
29	KINGSTON	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	1	1	2
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	OWEN SOUND	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	1	1	2
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	10960	2705	1285	1000	7465	0	1612	6135	500	0	0	143	70	0	31872	27780	109	1809	1919

OWMC PHASE 4A - TRANSPORTATION

TABLE 8: MILTON SITE AREA GROUPING SCENARIO 2 - PI-13M, PI-1M AND LF-4M RECEIVER ZONES 50, 51 AND 52 ORGANIC NON-PUMPABLE WASTE 300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	59	59	1	4	5
3	ST CATHARINES-NIAGARA	0	0	0	0	0	0	0	0	0	0	0	0	0	250	250	1	14	15
4	ORILLIA	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	1	1	2
5	MIDLAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	TRENTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	4242	0	0	0	0	0	0	0	0	0	0	0	0	259	4501	16	243	259
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	123	123	1	7	8
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	1	3	4
19	KITCHENER/WATERLOO	5921	0	0	0	0	0	0	0	0	0	0	0	0	260	6181	21	334	355
20	TORONTO	14250	0	0	0	0	0	0	0	0	0	0	0	0	2214	16464	55	888	943
21	OSHAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	270	270	1	15	16
22	GUELPH	2028	0	0	0	0	0	0	0	0	0	0	0	0	105	2133	8	115	123
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	109	109	1	6	7
25	SUDBURY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	0	0	0	0	66	66	1	4	5
27	NORTH BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	KINGSTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	26440	0	0	0	0	0	0	0	0	0	0	0	0	3780	30220	108	1634	1742

OWMC PHASE 4A - TRANSPORTATION

TABLE 9: MILTON SITE AREA GROUPING SCENARIO 2 - PI-13N, PI-1N, LF-4N RECEIVER ZONE 50, 51 & 52 INORGANIC PUMPABLE WASTE TO P/C INCLUDING ORGANIC PUMPABLE FROM INCINERATOR 300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL INORGANIC PUMPABLE WASTE	TOTAL WASTE TO LF SITE	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16	16	1	2	3
3	ST CATHARINES-NIAGARA	0	0	0	0	0	0	0	0	0	43	0	0	0	0	43	44	1	3	4
4	ORILLIA	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
5	MIDLAND	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
6	TRENTON	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
7	TIMMINS	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16	16	1	2	3
8	HAMILTON	0	0	0	0	0	7604	0	0	0	67	0	0	0	0	7671	7845	27	508	535
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	51	0	0	0	0	51	52	1	4	5
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	88	0	0	0	0	88	90	1	6	7
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	37	0	0	0	0	37	38	1	3	4
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	1	1	2
17	BARRIE	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	1	1	2
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	0	0	0	0	0	0	0	0	0	80	0	0	0	0	80	82	1	6	7
20	TORONTO	0	0	0	0	0	146704	0	0	0	924	25000	0	0	0	172628	176533	389	11416	12005
21	OSHAWA	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	33	1	3	4
22	GUELPH	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	33	1	3	4
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	1	2
24	STRATFORD	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	33	1	3	4
25	SUDBURY	0	0	0	0	0	0	0	0	0	27	0	0	0	0	27	28	1	2	3
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	43	0	0	0	0	43	44	1	3	4
27	NORTH BAY	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
29	KINGSTON	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	1	2
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	1	1	2
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
32	OTTAWA	0	0	0	0	0	0	0	0	0	21	0	0	0	0	21	21	1	2	3
33	CORNWALL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
	TOTAL WASTE	0	0	0	0	0	154308	0	0	0	1600	25000	0	0	0	180908	185000	442	11979	12621

OWMC PHASE 4A - TRANSPORTATION

TABLE 10: MILTON SITE AREA GROUPING SCENARIO 2 - PI-13N, PI-1N AND LF-4N RECEIVER ZONES 50, 51 AND 52 INORGANIC NON-PUMPABLE WASTE 300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS														TOTAL	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
		1	2	3	4	5	6	7	8	9	10	11	12	13	14				
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	ST CATHARINES-NIAGARA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	ORILLIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	MIDLAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	TRENTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	0	0	0	0	0	1084	0	0	0	0	0	0	0	0	1084	4	59	63
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TORONTO	0	0	0	0	0	20916	0	0	0	0	35000	0	0	0	55916	187	3014	3201
21	OSHAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	GUELPH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	NORTH BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	KINGSTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	0	0	0	0	0	22000	0	0	0	0	35000	0	0	0	57000	191	3073	3264

OWMC PHASE 4A - TRANSPORTATION

TABLE 11: NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPING SCENARIO 2 - LF-3C, LF-9C, LF-1E AND PI-27E RECEIVER ZONES 53, 54, 55 AND 56 ORGANIC PUMPABLE WASTE TO INCINERATOR LESS AMOUNT GOING DIRECTLY TO P/C

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL ORGANIC PUMPABLE WASTE	WASTE TO PI SITE	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	19	0	0	3	0	0	22	19	1	2	3
3	ST CATHARINES-NIAGARA	1166	1319	1253	0	7465	0	96	2007	24	0	0	3	16	0	13349	11635	39	753	792
4	ORILLIA	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	1	2
5	WELLAND	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	1	2
6	TRENTON	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2	1	1	2
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	1758	690	32	0	0	0	183	865	37	0	0	5	54	0	3624	3159	11	205	216
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	28	0	0	5	0	0	33	29	1	2	3
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	7	1	1	2
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	21	0	0	3	0	0	24	21	1	2	3
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	7	1	1	2
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	1289	0	0	0	0	0	0	0	117	0	0	8	0	0	1414	1232	5	80	85
20	TORONTO	5907	413	0	1000	0	0	1261	2841	143	0	0	93	0	0	11658	10161	34	658	692
21	OSHAWA	0	0	0	0	0	0	0	0	18	0	0	3	0	0	21	18	1	2	3
22	GUELPH	840	283	0	0	0	0	72	422	18	0	0	3	0	0	1638	1428	5	93	98
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	11	0	0	3	0	0	14	12	1	1	2
26	PETERBOROUGH	0	0	0	0	0	0	0	0	24	0	0	3	0	0	27	24	1	2	3
27	NORTH BAY	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	6	1	1	2
28	BELLEVILLE	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	5	1	1	2
29	KINGSTON	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	1	1	2
30	BROCKVILLE	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	6	1	1	2
31	OWEN SOUND	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3	1	1	2
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	10960	2705	1285	1000	7465	0	1612	6135	500	0	0	140	70	0	31872	27780	110	1810	1920

OWMC PHASE 4A - TRANSPORTATION

TABLE 12: NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPING SCENARIO 2 LF-3C, LF-9C, LF-1E AND PI-27E RECEIVER ZONES 53, 54, 55 AND 56 ORGANIC NON-PUMPABLE WASTE 300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	109	109	1	6	7
3	ST CATHARINES-NIAGARA	2812	0	0	0	0	0	0	0	0	0	0	0	0	250	3062	11	166	177
4	ORILLIA	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	1	1	2
5	MIDLAND	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14	1	1	2
6	TRENTON	0	0	0	0	0	0	0	0	0	0	0	0	0	15	15	1	1	2
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	4242	0	0	0	0	0	0	0	0	0	0	0	0	259	4501	16	243	259
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28	1	2	3
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	0	0	0	0	0	50	50	1	3	4
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	3108	0	0	0	0	0	0	0	0	0	0	0	0	260	3368	12	182	194
20	TORONTO	14250	0	0	0	0	0	0	0	0	0	0	0	0	2214	16464	55	888	943
21	OSHAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	270	270	1	15	16
22	GUELPH	2028	0	0	0	0	0	0	0	0	0	0	0	0	105	2133	8	115	123
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	0	0	0	0	140	140	1	8	9
27	NORTH BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	38	38	1	3	4
29	KINGSTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13	1	1	2
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	26440	0	0	0	0	0	0	0	0	0	0	0	0	3780	30220	112	1635	1747

OWMC PHASE 4A - TRANSPORTATION

TABLE 13: NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPINGS   SCENARIO 2 - LF-3C, LF-4C, LF-1E AND PI-27E   RECEIVER ZONES 53, 54, 55 AND 56   INORGANIC PUMPABLE WASTE TO P/C INCLUDING ORGANIC PUMPABLE FROM INCINERATOR

MODEL ZONE #	LOCATION	WASTE CLASS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL INORGANIC PUMPABLE WASTE	WASTE TO LF SITE	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	33	1	3	4
3	ST CATHARINES-NIAGARA	0	0	0	0	0	39081	0	0	0	43	15895	0	0	0	55019	57082	191	3692	3883
4	ORILLIA	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
5	MIDLAND	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
6	TRENTON	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
7	TIMMINS	0	0	0	0	0	0	0	0	0	16	0	0	0	0	16	16	1	2	3
8	HAMILTON	0	0	0	0	0	94314	0	0	0	67	9105	0	0	0	103486	105827	353	6844	7197
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	51	0	0	0	0	51	52	1	4	5
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	89	0	0	0	0	89	91	1	6	7
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	38	0	0	0	0	38	39	1	3	4
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	1	1	2
17	BARRIE	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	1	1	2
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	0	0	0	0	0	0	0	0	0	81	0	0	0	0	81	83	1	6	7
20	TORONTO	0	0	0	0	0	11331	0	0	0	934	0	0	0	0	12265	12542	42	812	854
21	OSHAWA	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	33	1	3	4
22	GUELPH	0	0	0	0	0	8782	0	0	0	32	0	0	0	0	8814	9013	31	583	614
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	1	2
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	0	27	0	0	0	0	27	28	1	2	3
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	43	0	0	0	0	43	44	1	3	4
27	NORTH BAY	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	1	1	2
29	KINGSTON	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	1	1	2
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	15	1	1	2
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
32	OTTAWA	0	0	0	0	0	0	0	0	0	22	0	0	0	0	22	22	1	2	3
33	CORNWALL	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	1	1	2
	TOTAL WASTE	0	0	0	0	0	154308	0	0	0	1601	25000	0	0	0	180908	185000	640	11978	12618

OWMC PHASE 4A - TRANSPORTATION

TABLE 14: NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPINGS   SCENARIO 2 - LF-3C, LF-9C, LF-1E AND PI-27E   RECEIVER ZONES 53, 54, 55 AND 56   INORGANIC NON-PUMPABLE WASTE   300 kt SCENARIO

MODEL ZONE #	LOCATION	WASTE CLASS																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	TOTAL	# OF TRUCKS CARRYING DRUMS	# OF TRUCKS CARRYING WASTE	TOTAL # OF TRUCKS
1	WINDSOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	BRANTFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	ST CATHARINES-NIAGARA	0	0	0	0	0	5686	0	0	0	0	22252	0	0	0	27938	94	1506	1600
4	ORILLIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	MIDLAND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	TRENTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	TIMMINS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	HAMILTON	0	0	0	0	0	13447	0	0	0	0	12748	0	0	0	26195	88	1412	1500
9	CHATHAM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	OTHER S.W.-CLINTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	SARNIA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	OTHER S.C.-HALIBURTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	OTHER S.E.-RENFREW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	OTHER NC.&E-TROUT CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	OTHER N.W.-GERALDTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	THUNDER BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	BARRIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	LONDON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	KITCHENER/WATERLOO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	TORONTO	0	0	0	0	0	1615	0	0	0	0	0	0	0	0	1615	6	88	94
21	OSHAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	GUELPH	0	0	0	0	0	1252	0	0	0	0	0	0	0	0	1252	5	68	73
23	SAULT STE. MARIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	STRATFORD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	SUDBURY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	PETERBOROUGH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	NORTH BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	BELLEVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	KINGSTON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	BROCKVILLE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	OWEN SOUND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	OTTAWA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	CORNWALL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WASTE	0	0	0	0	0	22000	0	0	0	0	35000	0	0	0	57000	193	3074	3267

OWMC PHASE 4A - TRANSPORTATION

TABLE 15: SUMMARY OF DISAGGREGATED SPECIAL WASTE VEHICLE MOVEMENTS

SITE/ SITE COMBINATION	ORGANIC WASTE TO INCINERATOR(1)				INORGANIC WASTE TO P/C				TOTAL VEHICLE MOVEMENTS
	PUMPABLE	NON-PUMPABLE	DRUMS	TOTAL	PUMPABLE	NON-PUMPABLE	DRUMS	TOTAL	
CASE 1									
LF-3C	1810	1635	222	3667	11978	3074	833	15885	19552
LF-9C	1810	1635	222	3667	11978	3074	833	15885	19552
LF-1E	1810	1635	222	3667	11978	3074	833	15885	19552
CASE 2									
PI-13N/LF-4N	1810	1634	217	3661	11979	3073	833	15885	19546
PI-1N/LF-4N	1810	1634	217	3661	11979	3073	833	15885	19546
PI-27E/LF-1E	1810	1635	222	3667	11978	3074	833	15885	19552
CASE 3									
PI-13N/LF-4N	1810	1634	217	3661	11979	3073	833	15885	19546
PI-1N/LF-4N	1810	1634	217	3661	11979	3073	833	15885	19546
PI-27E/LF-1E	1810	1635	222	3667	11978	3074	833	15885	19552

1. LESS AMOUNT GOING DIRECTLY TO P/C.

REFERENCES

1. M.M. Dillon Ltd. 1985. Site Selection Process. Phase 4A: Selection of a Preferred Site - Transportation

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5. Monenco Limited. 1984. The Existing Waste Treatment Industry.

6. OWMC. 20 August 1984. Memorandum from D.W. Heeney, Phase 4A, Scenario 1, Transportation Analysis.

7. Monenco Limited. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

8. Pilorusso Research Associates Inc. July 1984. Transportation Costs.

9. OWMC. 9 May 1985 Memorandum from D.W. Heeney, Revised Waste Distributions - Scenario 2, Enclosures (3).

10. Pilorusso Research Associates, Inc. 1984, Background Paper, Transportation of Special Wastes in Ontario.

APPENDIX G

TRANSPORT COST COMPARISON

1. INTRODUCTION

The transport cost comparison of the nine facility operating options includes the separate costing for the movement of special waste, inter-site transfers, and additives and reagents. In support of these costs, the quantities and vehicle requirements of the process additives and reagents and inter-site transfers for total solidification are presented herein along with the costing rules applied for all three transport components being modelled. The results of these analyses are presented and compared for each facility operating option.

2. INTER-SITE TRANSFER COSTS

The quantities of inter-site transfers vary among the three facility operating cases. Each unique set of transfer quantities was extracted from information contained in the Monenco Limited Engineering Report (reference 1). The data are presented herein along with other relevant information to facilitate the calculation of the annual two-way site transfer costs, including terminal times, for each option tested.

2.1 CASE 1 - INTEGRATED SITE OPTIONS

The integrated sites LF-3C, LF-9C and LF-1E do not require inter-site transfers because all the treatment facilities are located on the same site. Consequently, there will not be any transfer costs associated with these operating options for the purposes of facility site selection.

2.2 CASE 2 - SEPARATE LANDFILL

Under a Case 2 facility operating option the physical/chemical plant, incinerator and solidification plant are located at the PI site with a separate landfill at the LF site. Therefore, the three siting options PI-13N/LF-4N, PI-1N/LF-4N and PI-27E/LF-1E require inter-site transfers to move the treated solidifying waste and slag from the PI site to the landfill and the leachate from the landfill to the PI site.

Table 1 presents the transfer quantities, truck movements, costing basis and the annual two-way costs associated with each facility operating option. Since transfers are costed on an hourly basis, each truck movement must include a total estimated load and unload time of 60 minutes, plus the round trip gate-to-gate time.

2.3 CASE 3 - SEPARATE INCINERATOR

Under a Case 3 facility operating option the physical/chemical plant, solidification plant and landfill are located at the LF site with a separate incinerator at the PI site. This arrangement requires a transfer of ash, process salt ash, contaminated storm water and slag from the incinerator to the physical/chemical plant at the LF site and a reverse transfer of pretreated organics (oil/water) to the incinerator at the PI site. The three relevant siting options are PI-13N/LF-4N, PI-1N/LF-4N and PI-27E/LF-1E.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1: TRANSPORT COST COMPARISON - (INTER-SITE TRANSFERS)

300 kt SCENARIO | CASE II - SEPARATE LANDFILL | TOTAL SOLIDIFICATION

OPTION	WASTE TYPE	WASTE QUANTITY (t/a)	# OF TRUCKS	TERMINAL TIME (min)(1)	TIME FOR TRANSFER (min)	COST BASIS ($/min)	COST PER WASTE TYPE ($)	TOTAL COST ($)
PI-13N/LF-4N								$1,446,432
	Solidifying Waste (PI > LF)	384300	12810	60	16	1.333333	$1,298,080	
	Slag (PI > LF)	7600	254	60	16	1.333333	$25,739	
	Leachate (LF > PI)	36400	1210	60	16	1.333333	$122,613	
PI-1N/LF-4N								$1,256,112
	Solidifying Waste (PI > LF)	384300	12810	60	6	1.333333	$1,127,280	
	Slag (PI > LF)	7600	254	60	6	1.333333	$22,352	
	Leachate (LF > PI)	36400	1210	60	6	1.333333	$106,480	
PI-27E/LF-1E								$1,256,112
	Solidifying Waste (PI > LF)	384300	12810	60	6	1.333333	$1,127,280	
	Slag (PI > LF)	7600	254	60	6	1.333333	$22,352	
	Leachate (LF > PI)	36400	1210	60	6	1.333333	$106,480	

(1) Solidified waste and slag are moved in a 30t, 5 axle, semi-dump truck at a cost of $80/hour.
Leachate is moved in a 30t, 5 axle, tanker truck at a cost of $80/hour.

(2) 60 Minutes (total load and unload time) are added to in-transit time from gate-to-gate.

Table 2 presents the transfer quantities, truck costing basis and the total annual two-way cost associated with each facility operating option. As under Case 2, transfers are costed on an hourly basis and each truck movement includes a total load and unload time of 60 minutes, plus the round trip gate-to-gate time.

A summary of the load size, truck type, one-way vehicle movements and cost basis used for the transfer of materials between components of partially integrated siting options (Case 2 and 3) are presented in Table 3. A 30-tonne load size was assumed for all materials with the exception of the transfer of ash from the incinerator to the physical/chemical plant. This material will "cube out" rather than "gross out" for shipping purposes. Consequently, the selected vehicle will only hold an ash content (dry weight) of 10 t.

3. ADDITIVE AND REAGENT TRANSPORT COSTS

The quantities of additives and reagents are the same for each facility operating case. Table 6 of Appendix E presents a list of the chemicals, their form, assumed shipping location and quantities required. For Case 1 and 2 siting combinations, the materials all arrive at the same site, but for Case 3 certain materials go to the physical/chemical plant located at the LF site with the balance going to the incinerator on the PI site.

Further information developed and assumed for the calculation of additive and reagent transport costs are provided in Table 4 and in report subsection 6.2. This table details the truck types, load sizes, costing formulae and one-way vehicle movements for additives and reagents. These costing formulae, as developed by

OWMC PHASE 4A - TRANSPORTATION

TABLE 2: TRANSPORT COST COMPARISON - (INTER-SITE TRANSFERS)

300 kt SCENARIO — CASE III - SEPARATE INCINERATOR — TOTAL SOLIDIFICATION

OPTION	WASTE TYPE	WASTE QUANTITY (t/a)	# OF TRUCKS	TERMINAL TIME (min)(2)	TIME FOR TRANSFER (min)	COST BASIS ($/min)	COST PER WASTE TYPE ($)	TOTAL COST ($)
PI-13N/LF-4N								$201,451
	Process Salt Ash (PI to LF)	4800	160	60	16	1.333333	$16,213	
	Ash (PI to LF)(1)	13000	1300	60	16	1.333333	$131,733	
	Stormwater (PI to LF)	7200	240	60	16	1.333333	$24,320	
	Slag (PI to LF)	7600	254	60	16	1.333333	$25,739	
	Oil/Water (LF to PI)	1000	34	60	16	1.333333	$3,445	
PI-1N/LF-4N								$174,944
	Process Salt Ash (PI to LF)	4800	160	60	6	1.333333	$14,080	
	Ash (PI to LF)(1)	13000	1300	60	6	1.333333	$114,400	
	Stormwater (PI to LF)	7200	240	60	6	1.333333	$21,120	
	Slag (PI to LF)	7600	254	60	6	1.333333	$22,352	
	Oil/Water (LF to PI)	1000	34	60	6	1.333333	$2,992	
PI-27E/LF-1E								$174,944
	Process Salt Ash (PI to LF)	4800	160	60	6	1.333333	$14,080	
	Ash (PI to LF)(1)	13000	1300	60	6	1.333333	$114,400	
	Stormwater (PI to LF)	7200	240	60	6	1.333333	$21,120	
	Slag (PI to LF)	7600	254	60	6	1.333333	$22,352	
	Oil/Water (LF to PI)	1000	34	60	6	1.333333	$2,992	

(1) Ash will cube out rather than gross out, consequently the selected vehicle of 30t will only hold an ash content (dry weight) of 10t.

(2) 60 minutes (total load and unload time) must be added to in-transit time from gate-to-gate.

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

LOAD SIZE, TRUCK TYPE, ONE-WAY VEHICLE MOVEMENTS AND COST BASIS FOR INTER-SITE TRANSFERS

Material	Load Size	Truck Type	Vehicle Movements and Cost Basis[1]
CASE 2			
Solidifying Waste	30 t	5 axle semi-dump	12,810
Slag	30 t	5 axle semi-dump	254
Leachate	30 t	5 axle tanker	1,210
Total			14,274
CASE 3			
Process Salt Ash	30 t	5 axle tanker	160
Contaminated Stormwater	30 t	5 axle tanker	240
Ash[2]	10 t	5 axle semi-dump	1,300
Slag	30 t	5 axle semi-dump	254
Oil/Water	30 t	5 axle tanker	34
Total			1,988

NOTES:

1. The cost basis for all inter-site transfer movements is at the rate of $80/hour. A total of 60 minutes of load and unload time is added to the in-transit gate-to-gate time.

2. Ash will cube out rather than gross out. Consequently, the selected vehicle capable of holding 30 t will only hold an ash content (dry weight) of 10 t.

OWMC PHASE 4A - TRANSPORTATION

TABLE 4

LOAD SIZE, TRUCK TYPE, ONE-WAY VEHICLE MOVEMENTS AND COST BASIS FOR THE TRANSPORTATION OF PROCESS ADDITIVES AND REAGENTS

Material	Load Size[1]	Truck Type[2]	Vehicle movements and Cost Basis[2,3]
Cement	37 t	6 axle semi	1,424 (a)
Sodium Silicate	31 t	6 axle semi	700 (a)
Sulphur Dioxide	19 t	3 axle tanker	6 (b)
Chlorine	19 t	3 axle tanker	22 (b)
Caustic Soda	31 t	6 axle semi	202 (a)
Hydrated Lime	36 t	6 axle semi	206 (a)
Activated Carbon	20 t	5 axle semi van	5 (c)
Nitrogen	18500 Nm^3	3 axle tanker	2 (b)
Calcium Oxide	36 t	6 axle semi	67 (a)
Total			2,634

NOTES:

1. Derived from Monenco Limited. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

2. Pilorusso Research Associates Inc., letter dated 15 October 1984.

3. Cost Basis[2]

(a) Transport Cost = \$98 + \$1.40/round trip km gate-to-gate.
(b) Transport Cost = \$80 + \$1.16/round trip km gate-to-gate.
(c) Transport Cost = \$46 + \$1.30/round trip km gate-to-gate.

4. An alternative chemical compound (sodium hypochlorite) to liquid chlorine is being considered by the engineering consultant.

Pilorusso Research Associates (reference 2) for the individual truck types, include a total loading and unloading time estimate of two hours.

The round trip gate-to-gate distances from the shipping locations of the additive and reagent sources to the candidate sites were obtained from the transportation model. Travel along the centroid connectors (discussed in Section 3.3. of Appendix E), is included in these distances and therefore reflected in the costs of transporting additive and reagent materials. All of the source locations except one coincide with special waste source points, and therefore the path adhered to for their movement follows the preferred route criteria as identified in Appendix E. The route used from the calcium oxide source located at Beachville, Ontario was evaluated separately based on the same criteria as the other preferred routes.

4. SPECIAL WASTE TRANSPORT COSTS

The special waste transport costs are based on the results of the vehicle movement calculations presented in Appendix F. For each of the two site area groupings defined, (Milton and West Lincoln/ Niagara Falls) a unique waste distribution was developed and disaggregated into four waste categories (organic pumpable, organic non-pumpable, inorganic pumpable, inorganic non-pumpable) and further by location for conversion to vehicle movements. Each of these movements were then costed according to the costing rules and assumptions developed and were adopted for use in Phase 4A site selection and presented herein.

Table 5 details the cost basis on which the three types of special waste vehicles from each municipal area are calculated and the terminal times associated with their waste types. The vehicle movements are costed on a time basis, at a rate of $60/hour, if the return gate-to-gate distance is less than 225 km or on a distance basis, at a rate of $1.25/km, if this distance is greater than 225 km. Terminal time charges are already included in the distance charge rates but are additive to trips costed on a time basis. These costing data, adopted for use during Phase 4A, were developed in conjunction with Pilorusso Research Associates (reference 2). Once the annual two-way costs were calculated for the vehicle movements from each municipal area source location by waste category, to a candidate receiver site or site combination, they were summed to produce a total special waste transport cost for that option. The round trip gate-to-gate distances from the special waste source points to the candidate receiver sites were taken from the transportation model. Travel time and distance along the centroid connectors is included and is therefore reflected in the cost of transporting special waste.

5. RESULTS

Table 6 presents a summary of the annual one-way vehicle movement calculations used as an input to the cost calculation. These calculations are based upon the receipt of 300 000 tonnes per annum of special waste and the required process additive and reagent quantities for total solidification.

A summary of all transport cost requirements for the nine facility operating options is presented in Table 7. Separate costs are

OWMC PHASE 4A - TRANSPORTATION

TABLE 5

COST BASIS AND TERMINAL TIMES FOR THE MOVEMENT OF SPECIAL WASTE VEHICLES[5]

	WASTE STATE		
	Pumpables	Non-Pumpables	Drums[4]
Cost Basis			
Time[1]	\$60/hr.	\$60/hr.	\$60/hr.
Distance[2]	\$1.25/km	\$1.25/km	\$1.25/km
Terminal Times[3] (min.)			
Loading	30	40	40
Unloading	50	40	40
Total	80	80	80

NOTES:

1. Time basis if the return gate-to-gate distance is less than 225 km.
2. Distance basis if the return gate-to-gate round trip distance is greater than 225 km.
3. Terminal time charges are included in distance charge rates but are additive to trips costed on a time basis.
4. 3% of total waste assumed to be conveyed in drums.
5. See Table 6 of Appendix F, Modelling Alternative Scenarios for the vehicle types, capacities and load sizes adopted. Data used was developed in conjunction with and reported by, Pilorusso Research Associates Inc., letter dated 25 June 1984.

OWMC PHASE 4A - TRANSPORTATION

TABLE 6

ANNUAL ONE-WAY TRANSPORT VEHICLE MOVEMENTS

Siting Option and Operating Case	Annual Vehicle Movements[1] Total Solidification
Case 1 Integrated	
LF-3C	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	2,634
TOTAL	22,186
LF-9C	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	2,634
TOTAL	22,186
LF-1E	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	2,634
TOTAL	22,186

OWMC PHASE 4A - TRANSPORTATION

TABLE 6

ANNUAL ONE-WAY TRANSPORT VEHICLE MOVEMENTS

(Continued)

Siting Option and Operating Case	Annual Vehicle Movements[1] Total Solidification
Case 2 Separate Landfill	
PI-13N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	14,274
Additives & Reagent Transport	2,634
TOTAL	36,454
PI-1N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	14,274
Additives & Reagent Transport	2,634
TOTAL	36,454
PI-27E/LF-1E	
Special Waste Transport	19,552
Inter-Site Transfers	14,274
Additives & Reagent Transport	2,634
TOTAL	36,460

OWMC PHASE 4A - TRANSPORTATION

TABLE 6

ANNUAL ONE-WAY TRANSPORT VEHICLE MOVEMENTS

(Continued)

Siting Option and Operating Case	Annual Vehicle Movements[1] Total Solidification
Case 3 Separate Incinerator	
PI-13N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	1,988
Additives & Reagent Transport	2,634
TOTAL	24,168
PI-1N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	1,988
Additives & Reagent Transport	2,634
TOTAL	24,168
PI-27E/LF-1E	
Special Waste Transport	19,552
Inter-Site Transfers	1,988
Additives & Reagent Transport	2,634
TOTAL	24,174

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1. Annual vehicle movements are based upon the receipt of 300 000 t/a of special waste and includes the process reagents and additives required to treat this quantity.

tabulated for the movement of special waste, inter-site transfers among the non-integrated candidate site options and additives and reagents. The cost comparisons shown include the annual two-way travel of vehicles and forms an essential part of the Phase 4A site selection process.

6. TERMINAL TIME SENSITIVITY ANALYSIS

The 80 minute terminal times added to the in-transit travel time, for trips costed on a time basis and included with trips costed on a distance basis, were believed to be representative of haul industry costing practices based mainly upon the results of a Pilorusso Research Associates Inc. (reference 2) and an earlier Dillon survey. However, discussions between the OWMC and representatives of the Ontario Liquid Waste Carriers Association revealed that it was not uncommon to encounter two-hour loading and two-hour unloading times at waste producer or waste management facilities. Furthermore, it was suggested that in many cases the basic charge to the waste generator included these terminal times in the total cost. The terminal time provides for the weighing (in and out), paper work preparation, sampling, testing and loading or unloading of the waste.

In order to discern the transport cost implications of a four-hour total terminal time, the cost calculations were modified and compared to the initial cost calculations shown in Table 7. Table 8 presents the results of this comparison. The analysis, based on 240 minute terminal times produced an increase of approximately $3.13 million for all site options. This represented increases ranging from 44.3% to 64.0%; however, these increases do not affect the rank order of site options and therefore would not affect the site selection process.

OWMC PHASE 4A - TRANSPORTATION

TABLE 7

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COSTS

Siting Option and Operating Case	Annual Transport Costs[1] Total Solidification
Case 1 Integrated	
LF-3C	
Special Waste Transport	$4,472,000
Inter-Site Transfers	-
Additives & Reagent Transport	1,403,000
TOTAL TRANSPORT COST	5,875,000
LF-9C	
Special Waste Transport	4,073,000
Inter-Site Transfers	-
Additives & Reagent Transport	1,315,000
TOTAL TRANSPORT COST	5,388,000
LF-1E	
Special Waste Transport	4,530,000
Inter-Site Transfers	-
Additives & Reagent Transport	1,462,000
TOTAL TRANSPORT COST	5,992,000

OWMC PHASE 4A - TRANSPORTATION

TABLE 7

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COSTS

(Continued)

Siting Option and Operating Case	Annual Transport Costs[1] Total Solidification
Case 2 Separate Landfill	
PI-13N/LF-4N	
Special Waste Transport	3,864,000
Inter-Site Transfers	1,446,000
Additives & Reagent Transport	727,000
TOTAL TRANSPORT COST	6,037,000
PI-1N/LF-4N	
Special Waste Transport	3,891,000
Inter-Site Transfers	1,256,000
Additives & Reagent Transport	741,000
TOTAL TRANSPORT COST	5,888,000
PI-27E/LF-1E	
Special Waste Transport	4,366,000
Inter-Site Transfers	1,256,000
Additives & Reagent Transport	1,432,000
TOTAL TRANSPORT COST	7,054,000

TABLE 7

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COSTS

(Continued)

Siting Option and Operating Case	Annual Transport Cost[1] Total Solidification
Case 3 Separate Incinerator	
PI-13N/LF-4N	
Special Waste Transport	3,954,000
Inter-Site Transfers	201,000
Additives & Reagent Transport	753,000
TOTAL TRANSPORT COST	4,908,000
PI-1N/LF-4N	
Special Waste Transport	3,957,000
Inter-Site Transfers	175,000
Additives & Reagent Transport	755,000
TOTAL TRANSPORT COST	4,887,000
PI-27E/LF-1E	
Special Waste Transport	4,496,000
Inter-Site Transfers	175,000
Additives & Reagent Transport	1,459,000
TOTAL TRANSPORT COST	6,130,000

NOTE:

1. Annual transport costs are based upon the receipt of 300 000 t/a of special waste and includes the process reagents and additives required to treat this quantity.

OWMC PHASE 4A - TRANSPORTATION
TABLE 8
COMPARISON OF THE ANNUAL RETURN GATE-TO-GATE TRANSPORT COST WITH 80 min. AND 240 min. TERMINAL TIMES[3]

Siting Option	80 min Terminal Time		240 min Terminal Time		Change	% Change
	Cost[2]	Rank	Cost[2]	Rank		
Case 1						
LF-3C	$5,875,000	4	$9,003,000	4	$3,128,000	+53.2
LF-9C	5,388,000	3	8,516,000	3	3,128,000	+58.1
LF-1E	5,992,000	6	9,120,000	6	3,128,000	+52.2
Case 2						
PI-13N/LF-4N	6,037,000	7	9,164,000	7	3,127,000	+51.8
PI-1N/LF-4N	5,888,000	5	9,015,000	5	3,127,000	+53.1
PI-27E/LF-1E	7,054,000	9	10,182,000	9	3,128,000	+44.3
Case 3						
PI-13N/LF-4N	4,908,000	2	8,035,000	2	3,127,000	+63.7
PI-1N/LF-4N	4,887,000	1	8,014,000	1	3,127,000	+64.0
PI-27E/LF-1E	6,130,000	8	9,259,000	8	3,128,000	+51.0

NOTES:

1. Trips are costed on a Time basis if return gate-to-gate trip is less than 225 km and on Distance if greater.
2. 80 min of Terminal Time charges are included in distance charge rate but are additive to trips costed on a time basis. For the transport costs calculated with 240 min. terminal times, 160 min (240-80) of terminal time are additive to the distance cost while 240 min are additive to the trips costed on a time basis.
3. Costs included the movements of special waste, additives and reagents and inter-site transfers.

REFERENCES

1. Monenco Limited. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

2. Pilorusso Research Associates Inc. 1984. Transportation Costs, 4 July.

APPENDIX H

LOCAL AND REGIONAL ACCESS ROAD IMPROVEMENTS

1. INTRODUCTION

The selected local and regional access roads to each of the candidate sites were examined to determine the improvements necessary to carry the additional truck volumes expected to be generated by the siting options. This examination provided data for Monenco Ltd. (engineering consultants) to incorporate into their cost factors on the detailed comparative analysis of the siting options. The access route examination concentrated on three areas of road performance:

- structural adequacy
- geometric design
- peak hour capacity.

The analysis was carried out for three sets of traffic conditions:

- existing (1983) traffic
- future (2000) traffic without OWMC traffic
- future (2000) traffic with OWMC traffic

The impacts on the roadways due to the presence of OWMC site generated traffic are perceived to be the difference between the future (year 2000) traffic without OWMC site generated traffic and the future (year 2000) traffic with OWMC site generated traffic.

This appendix documents the methodology and results of the analysis of the local and regional access routes.

2. METHODOLOGY

The local and regional access road analysis concerned three areas of road performance:

- structural adequacy
- geometric design
- peak hour capacity.

Each of these areas was considered in determining the impact of OWMC site generated traffic on the access roads and the cost to upgrade the roads to accommodate the additional traffic. The following subsections outline the approach and data sources used in examining the access roads in these areas.

2.1 STRUCTURAL ADEQUACY

In examining the road's structural adequacy it was assumed that the agency responsible for its operation would carry out maintenance activities such that the road could provide adequate structural support based on the existing road classification and percent of trucks. Therefore any substantial increase in traffic volumes or percentage of trucks which might put the roadway into a higher classification would indicate a structural deficiency.

The road's deficiency was expressed in terms of the difference in granular base equivalency (GBE) required to support the existing condition and the future condition. The GBE was expressed in millimetres and was used as a basis for estimating the cost for upgrading the road to an acceptable level of structural adequacy for the future condition.

The cost estimates for road improvements are provided as a comparative indicator of the impact of OWMC site generated traffic on the road and are intended to be a preliminary estimate of the cost of road construction or resurfacing. The costs are based generally on the 'benchmark costs' provided by the road agencies through their roadway inventory reports. All costs and improvements shown in this report are subject to discussion with the appropriate roadway authority at a later date.

2.2 GEOMETRIC DESIGN

The analysis of the roadway geometrics included improvements to the existing alignment, proposed improvements to the roadway alignment at 'jog' intersection, and the design requirements of site entrances. The roadway's existing geometric features were determined from the roadway inventory sheets supplied by the various roadway agencies. Each section of road was examined to determine the existing characteristics of the following geometric features:

- pavement width/lane width
- shoulder width
- terrain
- right-of-way width

The Ontario Ministry of Transportation and Communications has developed geometric standards for rural and urban Ontario roads. These standards are appended to the Inventory Manual - Municipal Roads and Structures (reference 1) which is used as a guide for municipalities undergoing road inventory. The standards provide guidelines for lane and shoulder widths for a specific AADT range and design speed. These standards were used to determine the road geometrics necessary to support the future (year 2000) traffic.

The geometric improvements required to accommodate the year 2000 background traffic were compared with those improvements required for the year 2000 background traffic plus OWMC site generated traffic. The cost of the structural upgrading of a local road to accommodate year 2000 background plus OWMC site generated traffic includes the cost of improving the roadway's geometric components.

Regional road geometric improvements required for year 2000 background traffic were expected to be covered by the Region's road improvement program. The cost for any additional improvements due to OWMC site generated traffic would be an item for negotiation between OWMC, MTC and the road agency at a later stage in the site selection process.

Three other geometric improvements were examined:

- preliminary intersection alignment improvements,
- increased roadway right-of-way,
- site access alignment requirements.

The first two of these improvements involved the purchasing of additional land adjacent to the right-of-way. Preliminary intersection and site access alignment improvements also included a minor road improvement cost component which was included in the local road improvement costs. The amount of additional land required along an access route was calculated for each of these improvements; however, the cost of acquiring this land was estimated by other consultants in the site selection team.

2.3 PEAK HOUR CAPACITY

The roadway's peak hour capacity was estimated in order to determine if any geometric road improvements were necessary in order to provide capacity for the future traffic. In the case of local roads, the necessary geometric and structural improvements required for additional heavy trucks provided sufficient capacity to carry the future traffic volumes, therefore the peak hour capacity analysis was not carried out for those roadways. For most regional roads and provincial highways the proposed geometric improvements also provided adequate capacity. However, for certain sections of road which are expected to carry a large volume of traffic in the future, the capacity analysis was used to identify where additional lanes were required to meet the traffic demands.

The MTC's Inventory Manual - Municipal Roads and Structures (reference 1) provided the methodology for calculating the capacities of two lane and multi-lane roadways. The methodology described in that document applies the following factors in calculating the road's capacity:

- lane width
- shoulder width
- terrain
- percent trucks
- side entrances along the road section.

The peak hour traffic volume was estimated from the road's AADT using the design hour factor (DHF) as indicated on the roadway inventory form. The same DHF was applied to the forecasted AADT to estimate the year 2000 design hour volume.

3. RESULTS OF ANALYSIS

The results of the access road analysis are shown in Table 1 to 3. These tables specify the road improvements for each access road section used in each of the three regions: north, central, and east. In cases where there is a range in traffic volumes, the highest volumes were used in the analysis.

In the detailed comparative analysis of candidate siting options, the cost of local road improvements and land required to accommodate improvements was used by Monenco Ltd. as input to the cost factor. These improvement cost and required R-O-W values are summarized in Table 4 for each candidate site.

The road improvements identified a number of intersections where road realignment may be necessary. These locations are shown in Figures 1 to 4. These Figures also indicate the possible options and amount of additional land required to accommodate the realignments.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO NORTHERN CANDIDATE SITES (PI-1N, PI-13N & LF-4N)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
A. Hwy. 25 QEW to Britannia				
1. MTC-25400-00.0 (QEW to Hwy 5)				
AADT:	8,200	11,500	11,506	
LENGTH:	4.0 km	4.0 km	4.0	
PAVEMENT:	7.3 m	7.3 m	7.3 m	
SHOULDER:	3.0 m (rural)	3.0 m	3.0 m	
R-O-W:	37 m	37 m	37 m	
TRUCK %:	11	11	11	
CONDITION:				
V/C:		0.75		
2. MTC-25410-00.0 (Hwy. 5 to PI-1N)				
AADT:	7,200	10,100	10,106	
LENGTH:	6.4 km	6.4 km	6.4 km	
PAVEMENT:	73 m	7.3 m	7.3 m	
SHOULDER:	3.0 (rural)	3.0 m	3.0 m	
R-O-W:	37 m	3.7 m	37 m	
TRUCK %:	8	8	8	
CONDITION:				
V/C:		0.67		
3. MTC-25410-0.0 (PI-1N to Britannia/ RR 6)				
AADT:	7,200	10,100	10,106 - 10,216	
LENGTH:	1.0 km	1.0 km	1.0 km	
PAVEMENT:	7.3 m	7.3 m	7.3 m	
SHOULDER:	3.0 m (rural)	3.0 m	3.0 m	
R-O-W:	37 m	37 m	37 m	
TRUCK %:	8	8	8.0 - 9.0	
CONDITION:				
V/C:		0.67		

NOTES:

1) When no physical changes to pavement platforms are identified, this assumes that the pavement structure and shoulders are maintained by the roadway authority through the period. Physical changes may be required in some instances due to increased traffic volumes and trucking demand which changes the design requirements as defined by MTC road structure standards, e.g. pavement or shoulder widening or structural improvement due to more frequent heavy axle loadings.

OWMC PHASE 4A - TRANSPORTATION
TABLE 1
PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO NORTHERN CANDIDATE SITES (PI-1N, PI-13N & LF-4N)
(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
B. Fourth Line Rd.: 401 to Britannia				
1. HAL-4303 401 to Main Street				
AADT:	3,400	22,010	22,126	
LENGTH:	0.5 km	0.5 km	0.5 km	
PAVEMENT:	15.6 m	15.6 m	15.6 m	
SHOULDER:	4.8 (rural)	4.8 m	4.8 m	
R-O-W:	36.2 m	36.2 m	36.2 m	
TRUCK %:	15	15	15.4	
CONDITION:				
V/C:		0.95		
2. HAL-4301 Main to Derry				
AADT:	180	1,440	1,556	
LENGTH:	1.9 km	1.9 km	1.9 km	
PAVEMENT:	5.7 m	6.5 m	6.5 m	
SHOULDER:	0.5 m (rural)	2.0 m	2.0 m	
R-O-W:	20.0 m	20.0 m	20.0 m	
TRUCK %:	15	15	21.3	
CONDITION:				
V/C:		0.12		
3. MILT-237 Derry Rd. to Britannia				
AADT:	210	1,360	1,384 - 1,476	cost of $223,000 allocated to upgrade from 1000-2000 Class to 2000-3000 Class
LENGTH:	3.2 km	3.2 km	3.2 km	
PAVEMENT:	6.1 m	6.5 m	7.0 m	
SHOULDER:	0.75 m (rural)	2.0 m	2.0 m	
R-O-W:	17.1 m	17.1 m	17.1 m	
TRUCK %:	15	15	16.5 - 21.7	
CONDITION:		Structurally def. (165 GBE)	Structurally def. (180 GBE)	
V/C:		0.11		
C. Britannia Rd.: Fifth to LF-4N				
1. HAL-6303 Fifth Line to Fourth Line				
AADT:	1,180	1,840	1,840 - 2,040	
LENGTH:	1.3 km	1.3 km	1.3 km	
PAVEMENT:	6.1 m	6.5 m	7.0 m	
SHOULDER:	0.9 m (rural)	2.0 m	2.5 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	11	11	11.0 - 19.7	
CONDITION:				
V/C:		0.15		

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO NORTHERN CANDIDATE SITES (PI-1N, PI-13N & LF-4N)

(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
2. HAL-6303 Fourth Line to Third Line				
AADT:	1,180	1,840	1,924 - 1,956	
LENGTH:	1.4 km	1.4 km	1.4 km	
PAVEMENT:	6.1 m	6.5 m	7.0 m	
SHOULDER:	0.9 m (rural)	2.0 m	2.5 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	11	11	14.9 - 16.3	
CONDITION:				
V/C:		0.15		
3. HAL-6301 Third Line to Hwy. 25				
AADT:	1,180	1,840	1,950 - 1,956	
LENGTH:	1.4 km	1.4 km	1.4 km	
PAVEMENT:	6.7 m	6.7 m	7.0 m	
SHOULDER:	1.8 m	2.0 m	2.5 m	
R-O-W:	26.2 m	26.2 m	26.2 m	
TRUCK %:	11	11	16.0 - 16.3	
CONDITION:				
V/C:		0.15		
4. HAL-6311 Hwy. 25 to First Line E				
AADT:	300	470	470 - 582	
LENGTH:	1.3 km	1.3 km	1.3 km	
PAVEMENT:	6.2 m	6.5 m	6.5 m	
SHOULDER:	1.3 m	1.3 m	2.0 m	
R-O-W:	20.0 m	20.0 m	20.0 m	
TRUCK %:	20	20	20.0 - 35.4	
CONDITION:				
V/C:				
5. HAL-6309 First Line to LF-4N				
AADT:	400	800	880 - 912	
LENGTH:	2.2 km	2.2 km	2.2 km	
PAVEMENT:	6.0 m	6.5 m	6.5 m	
SHOULDER:	1.3 m	1.3 m	2.0 m	
R-O-W:	20 m	20 m	20 m	
TRUCK %:	7	7	15.5 - 18.4	
CONDITION:				
V/C:				

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO NORTHERN CANDIDATE SITES (PI-1N, PI-13N & LF-4N)

(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
D. MIL-231 First Line Road (Britannia to PI-1N)				Cost of $70,000 allocated to ugraded from 1000-2000 Class to 2000-3000
AADT:	680	1,060	1,060 - 1,140	
LENGTH:	1.0 km	1.0 km	1.0 km	
PAVEMENT:	6.1 m	6.5 m	7.0 m	
SHOULDER:	0.75 m (rural)	2.0 m	2.5 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	3	3	3.0 - 9.8	
CONDITION:		Structural def. (165 GBE)	Structural def. (180 GBE)	
V/C:				
E. MIL-242 Fifth Line Road (Britannia to PI-13N)				Cost of $62,000 allocated to upgrade from 200-1000 Class to 1000-2000
AADT:	250	390	390-590	
LENGTH:	1.0 km	1.0 km	1.0 km	
PAVEMENT:	6.4 m	6.4 m	6.5 m	
SHOULDER:	0.75 m (rural)	0.75 m	2.0 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	23	23	23.0 - 47.1	
CONDITION:			Structural def. (160 GBE)	
V/C:				

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO CENTRAL CANDIDATE SITES (LF-9C & LF-3C)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
A. Hwy. 20 from RR 24 to LF-9C 1. MTC-23730-2.9 (RR 24 to 0.3 km w/O Schram Rd.)				
AADT:	2,900	4,010	4,132	
LENGTH:	5.3 km	5.3 km	5.3 km	
PAVEMENT:	7.5 m	7.5 m	7.5 m	
SHOULDER:	2.5 m (rural)	2.5 m	2.5 m	
R-O-W:	20 m	20 m	20 m	
TRUCK %:	15	15	17.5	
CONDITION:	not deficient			
V/C:		0.27		
2. MTC-23730-2.9 (0.3 km w/o Schram Rd. to RR 65 & 27)				
AADT:	2,900	4,010	4,010 - 4,132	
LENGTH:	4.0 km	4.0 km	4.0 km	
PAVEMENT:	7.5 m	7.5 m	7.5 m	
SHOULDER:	2.5 m (rural)	2.5 m	2.5 m	
R-O-W:	20 m	20 m	20 m	
TRUCK %:	15	15	0 - 17.5 m	
CONDITION:	not deficient			
V/C:		0.27		
B. Niagara RR 24 from QEW to Hwy. 20 1. NIA-2431 (QEW to NRR 81)				- Four lane opertion required before year 2000 with or without OWMC operation in area. - Parking restrictions required or both sides to accomodate volume growth on roadway. - OWMC trucking does not change road requirements.
AADT:	7,190	14,320	14,408	
LENGTH:	3.8 km	3.8 km	3,8 km	
PAVEMENT:	14 m	14 m	14 m	
SHOULDER:	0 (urban)	0	0	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	13	13	13.5	
CONDITION:	not deficient, based on two-lane operation w/pkg lanes	parking restrictions required to provide 4 lanes operating width	same as year 2000 without OWMC operation	
V/C:		0.59		

NOTES:

1) When no physcial changes to pavement platforms are identified, this assumes that the pavement structure and shoulders are maintained by the roadway authority through the period. Physical changes may be required in some instances due to increased traffic volumes and trucking demand which changes the design requirements as defined by MTC road structure standards, e.g. pavement or shoulder widening or structural improvement due to more frequent heavy axle loadings.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO CENTRAL CANDIDATE SITES (LF-9C & LF-3C)

(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
2. NIA-2428 (RR 81 to Moyer Road)				- Four lane opertion required before year 2000 with or without OWMC operation in area. - Parking restrictions required or both sides to accomodate volume growth on roadway. - OWMC trucking does not change road requirements.
AADT:	6,990	16,210	16,298	
LENGTH:	0.7 km	0.7 km	0.7 km	
PAVEMENT:	14 m	14 m	14 m	
SHOULDER:	0 (urban)	0	0	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	14	14	14.5	
CONDITION:	not deficient with parking restrictions on both sides	not deficient with parking restrictions on both sides.	same as year 2000 without OWMC operation	
V/C:		0.54		
3. NIA-2425 (Moyer Rd. to RR 73)				Increase road width due to capacity constraints.
AADT:	6,990	16,210	16,298	
LENGTH:	1.1 km	1.1 km	1.1 km	
PAVEMENT:	10.4 m (3 lanes)	15 m (4 lanes)	15 m	
SHOULDER:	2.4 m (rural)	2.5 m	2.5 m	
R-O-W:	26.2 m	26.2 m	26.2 m	
TRUCK %:	14	14	14.5	
CONDITION:	no deficiencies	4 lanes required for capacity	same as year 2000 without OWMC operation	
V/C:		0.49 (4 lanes)		
4. NIA-2422 (RR 73 to Ninth Ave.)				Increased road width due to capacity problems.
AADT:	6,230	12,440	12,528	
LENGTH:	3.5 km	3.5 km	3.5 km	
PAVEMENT:	6.75 m (2 lanes)	15 m (4 lanes)	15 m	
SHOULDER:	2.75 m (rural)	2.5 m	2.5 m	
R-O-W:	26.2 m	26.2 m	26.2 m	
TRUCK %:	18	18	18.6	
CONDITION:	not deficient	upgraded for capacity to 4 lanes		
V/C:		0.31		

OWMC PHASE 4A - TRANSPORTATION
TABLE 2
PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO CENTRAL CANDIDATE SITES (LF-9C & LF-3C)
(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
5. NIA-2419 (Ninth Ave. -Sixteen Rd. RR 216)				
AADT:	5,420	8,801	8,889	
LENGTH:	3.0 km	3.0 km	3.0 km	
PAVEMENT:	6.7 m	7.5 m	7.5 m	
SHOULDER:	2.15 m (rural)	2.5 m	2.5 m	
R-O-W:	30.5 m	30.5 m	30.5 m	
TRUCK %:	18	18	18.8	
CONDITION:	not deficient			
V/C:		0.68		
6. NIA-2416 (NR 216 - Hwy. 20)				
AADT:	4,580	7,440	7,528	
LENGTH:	4.1 km	4.1 km	4.1 km	
PAVEMENT:	6.7 m	7.5 m	7.5 m	
SHOULDER:	2.15 m (rural)	2.5 m	2.5 m	
R-O-W:	30.5 m	30.5 m	30.5	
TRUCK %:	18	18	18.9	
CONDITION:	not deficient			
V/C:		0.58		
C. NIA-6513 RR 65-Hwy 20 to Krick Rd.				
AADT:	840	840	840 - 962	
LENGTH:	3.0 km	3.0 km	3.0 km	
PAVEMENT:	6.7 m	6.7 km	6.7 m	
SHOULDER:	2.75 m (rural)	2.75 m	2.75 m	
R-O-W:	26.2 m	26.2 m	26.2 m	
TRUCK %:	17	17	17.0 - 27.5	
CONDITION:				
V/C:		0.27		
D. Krick Rd.-RR 65 to LF-3C 1. W.L. (RR 65 to 0.6 km south)				Cost of $41,000 allocated to upgrade from 0-200 Class to 1000-2000.
AADT:	44	65	65 - 187	
LENGTH:	0.6 km	0.6 km	0.6 km	
PAVEMENT:	4.6 m	4.6 m	6.5 m	
SHOULDER:	0.6 m (rural)	0.6 m	2.0 m	
R-O-W:	20 m	20 m	20 m	
TRUCK %:	10	10	10.0 - 68.7	
CONDITION:			structural def.	
V/C:			(215 GBE)	

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO CENTRAL CANDIDATE SITES (LF-9C & LF-3C)

(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
2. W.L.-161 (0.6 km south of RR 65 to Vaughan Rd.)				Cost - $55,000
AADT:	35	50	50 - 172	
LENGTH:	0.8 km	0.8 km	0.8 km	
PAVEMENT:	3.1 m	3.1 m	6.5 m	
SHOULDER:	0.6 m (rural)	0.6 m	2.0 m	
R-O-W:	12.2 m	12.2 m	12.2 m	
TRUCK %:	10	10	10.0 - 73.8	
CONDITION:			structural def. (215 GBE)	
V/C:				
3. W.L.-153 (Vaughan to Elcho)				Cost - $96,000
AADT:	64	95	95 - 217	
LENGTH:	1.4 km	1.4 km	1.4 km	
PAVEMENT:	5.8 m	5.8 m	6.5 m	
SHOULDER:	0.6 m (rural)	0.6 m	2.0 m	
R-O-W:	20.0 m	20.0 m	20.0 m	
TRUCK %:	10	10	10.0 - 60.6	
CONDITION:			structural def. (215 GBE)	
V/C:				
4. W.L.-154 (Elcho to LF-3C)				Cost - $49,000
AADT:	66	98	98 - 220	
LENGTH:	0.7 km	0.7 km	0.7 km	
PAVEMENT:	5.2 m	5.2 m	6.5 m	
SHOULDER:	0.6 m (rural)	0.6 m	2.0 m	
R-O-W:	20.0 m	20.0 m	20.0 m	
TRUCK %:	10	10	10.0 - 60.0	
CONDITION:			structural def. (215 GBE)	
V/C:				

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO EASTERN CANDIDATE SITES (LF-1E & PI-27E)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
A. RR 47 - Biggar Rd. (QEW to Crowland Rd.)				
1. NIA-4710 - QEW to RR 98)				
AADT:	4,081	4,650	4,772	
LENGTH:	0.4 km	0.4 km	0.4 km	
PAVEMENT:	7.3 m	7.5 m	7.5 m	
SHOULDER:	3.0 m	3.0 m	3.0 m	
R-O-W:	30.5 m	30.5 m	30.5 m	
TRUCK %:	14	14	16.2	
CONDITION:				
V/C:		0.32		
2. NIA-4707 - RR 98 to PI-27E				
AADT:	354	1,700	1,822	
LENGTH:	0.8 km	0.8 km	0.8 km	
PAVEMENT:	6.1 m	6.5 m	6.5 m	
SHOULDER:	1.5 m	2.0 m	2.0 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	7	7	13.2	
CONDITION:				
V/C:		0.13		
3. NIA-4707 PI-27E to Crowland				
AADT:	354	1,780 - 1,822	1,780 - 1,822	
LENGTH:	0.9 km	0.9 km	0.9 km	
PAVEMENT:	6.1 m	6.5 m	6.5 m	
SHOULDER:	1.5 m	2.0 m	2.0 m	
R-O-W:	20.1 m	20.1 m	20.1 m	
TRUCK %:	7	7	11.1 - 13.2	
CONDITION:				
V/C:		11.1 - 13.2		

NOTES:

1) When no physical changes to pavement platforms are identified, this assumes that the pavement structure and shoulders are maintained by the roadway authority through the period. Physical changes may be required in some instances due to increased traffic volumes and trucking demand which changes the design requirements as defined by MTC road structure standards, e.g. pavement or shoulder widening or structural improvement due to more frequent heavy axle loadings.

OWMC PHASE 4A - TRANSPORTATION
TABLE 3
PREFERRED LOCAL AND REGIONAL ACCESS ROUTE IMPROVEMENT REQUIREMENTS WITH AND WITHOUT OWMC TRANSPORT SURCHARGE TO EASTERN CANDIDATE SITES (LF-1E & PI-27E)
(continued)

ROUTE AND ROAD SECTION NUMBER AND DESCRIPTION	EXISTING ROUTE SECTION FEATURES	ANTICIPATED CONDITIONS IN 2000 WITHOUT OWMC TRUCK TRANSPORT TRAFFIC[1]	ANTICIPATED CONDITIONS IN 2000 WITH OWMC TRUCK TRANSPORT TRAFFIC[1]	CONCLUSIONS & COMMENTS
B. Crowland-RR 47 to Carl 1. N.FALS-60011 - RR 47 to Carl				Cost of $62,000 allocated to upgrade from 0-200 Class to 200-1000
AADT:	38	50	130 - 172	
LENGTH:	1.0 km	1.0 km	1.0 km	
PAVEMENT:	6.1 m	6.1 m	6.5 m	
SHOULDER:	1.2 m	1.2 m	2.0 m	
R-O-W:	20.0 m	20.0 m	20.0 m	
TRUCK %:	25	25	70.9 - 78.1	
CONDITION:			structural def. (130 GBE)	
V/C:				
C. N.FALS-60038 Carl Rd. (Crowland to Morris Rd. at LF-1E				Cost of $26,000 allocated to upgrade from 200-1000 Class to 1000-2000
AADT:	180	260	340 - 382	
LENGTH:	0.8 km	0.8 km	0.8 km	
PAVEMENT:	6.7 m	6.7 m	6.7 m	
SHOULDER:	0.9 m	1.0 m	2.0 m	
R-O-W:	26.2 m	26.2 m	26.2 m	
TRUCK %:	12	12	32.5 - 39.9	
CONDITION:		structural def. (130 GBE)	structural def. (85 GBE)	
V/C:				

OWMC PHASE 4A - TRANSPORTATION
TABLE 4
ROAD UPGRADING COSTS AND ADDITIONAL ROAD RIGHT-OF-WAY AREA REQUIRED FOR SITING OPTIONS

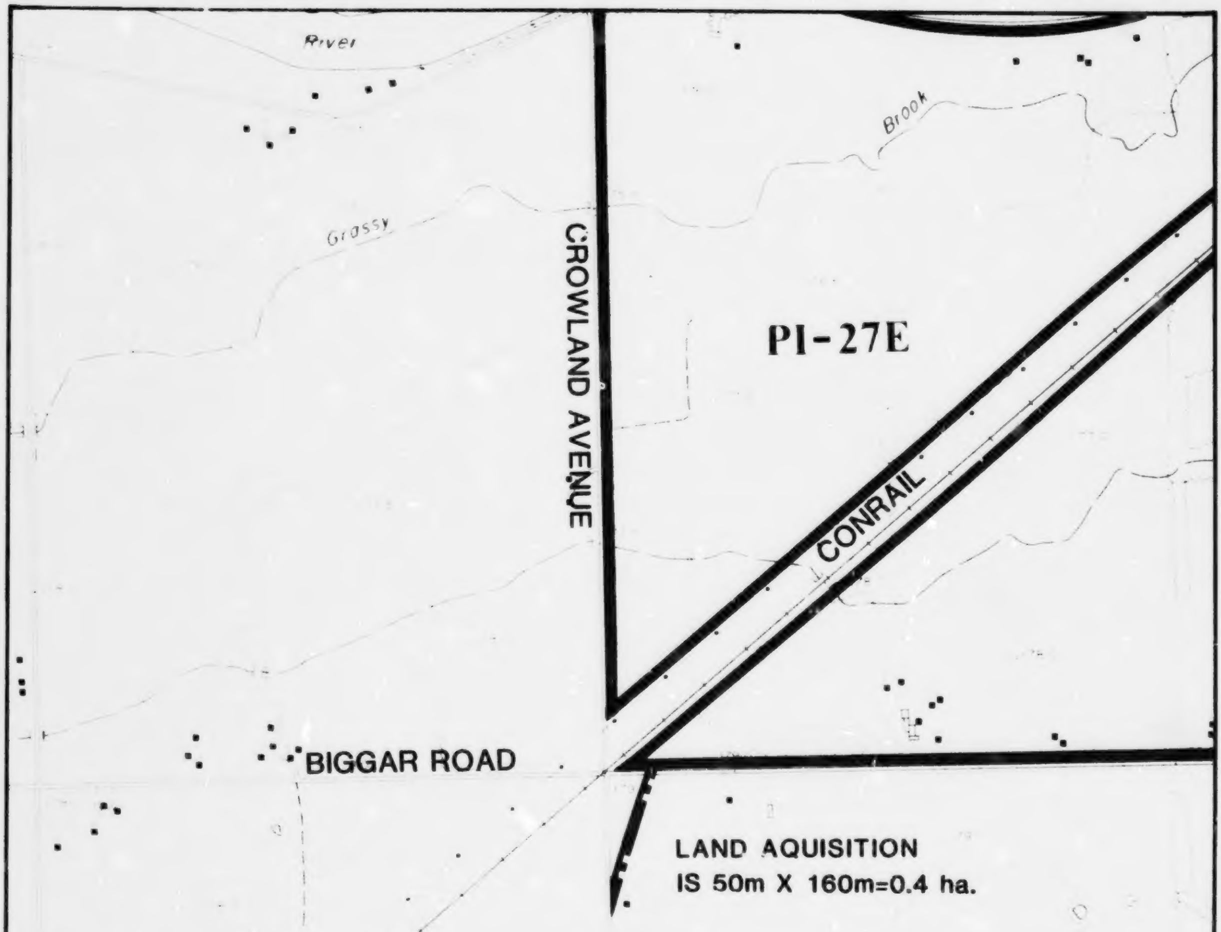
Site	Improvement	Cost (in thousands of dollars)	Additional Right-of-Way Required	
			Amount (ha)	Location of Right-of-Way Widening
LF-3C	. local[1] road upgrade and widening	241	0.624	. Krick Road from 0.6 km. south of Regional Road 65 to Vaughan Road
	. jog elimination	54	0.625	. Intersection of Krick Road and Vaughan Road (Figure 3)
	. jog elimination	39	0.180	. Intersection of Krick Road and Elcho Road (Figure 4)
	. bridge reconstruction (on Krick Road)	50	0	
	. site entrance	0	0	
Total		$384	1.429	
LF-9C	. site entrance	106	0	
Total		$106	0	
PI-13N/LF-4N	. local road upgrade and widening	285	0.928	. Fourth Line between Derry Road and Britannia Road
	. jog elimination	52	0.225	. Intersection of Britannia Road and Tremaine Road (Figure 2)
	. site entrance at PI-13N	106	0	
	. site entrance at LF-4N	36	0	
		$479	1.153	
PI-1N/LF-4N	. local road upgrade and widening	293	0.928	. Fourth Line between Derry Road and Britannia Road

OWMC PHASE 4A - TRANSPORTATION
TABLE 4
ROAD UPGRADING COSTS AND ADDITIONAL ROAD RIGHT-OF-WAY AREA REQUIRED FOR SITING OPTIONS (Continued)

Site	Improvement	Cost (in thousands of dollars)	Additional Right-of-Way Required: Amount (ha)	Additional Right-of-Way Required: Location of Right-of-Way Widening
	. jog elimination	52	0.225	. Intersection of Britannia Road and Tremaine Road (Figure 2)
	. site entrance (2) to PI-1N	212	-	
	. site entrance to LF-4N	36	0	
		$593	1.153	
LF-1E	. local road upgrade and widening	88	0	
	. intersection by-pass and rail crossing improvement	400	0.400	. Intersection of Crowland Avenue and Biggar Road (Figure 1)
	. site entrance	106	0	
Total		$594	0.400	
PI-27E/LF-1E	. local road upgrade and widening	88	0	
	. intersection by-pass and rail crossing improvement	400	0.400	. Intersection of Crowland Avenue and Biggar Road (Figure 1)
	. site entrance at PI-27E	106	0	
	. site entrance at LF-1E	106	0	
		$700	0.400	

NOTES:

1. "Local roads" refers to roads under the jurisdiction of the local road agency (i.e. Town of W. Lincoln, Town of Milton, and City of Niagara Falls).


River
Brook
Grassy
CROWLAND AVENUE
PI-27E
CONRAIL
BIGGAR ROAD
LAND AQUISITION
IS 50m X 160m=0.4 ha.
CON

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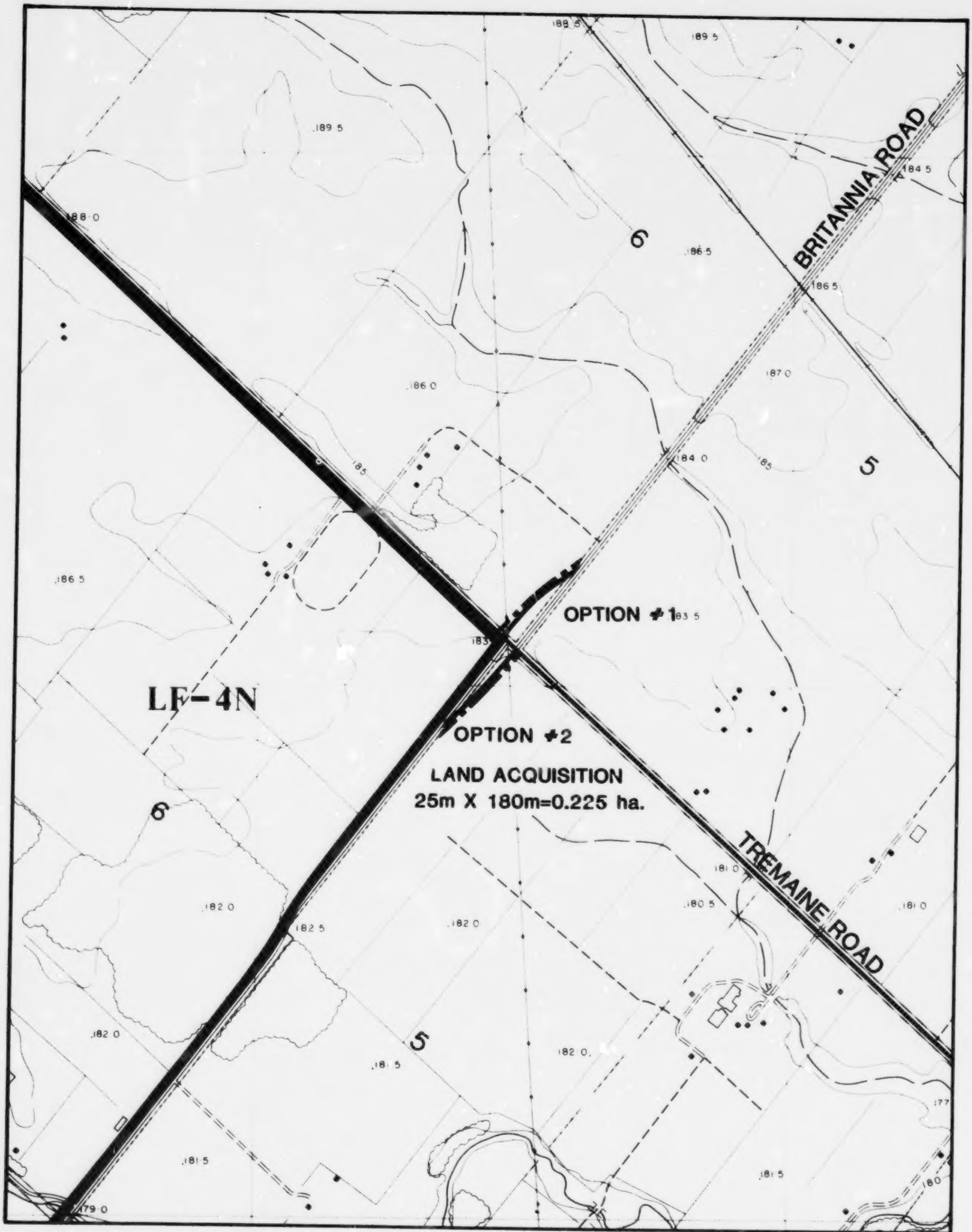
PI-27E
PHASE 4A
ALIGNMENT OF CROWLAND AVENUE
RR 47 INTERSECTION
FIGURE 1


188.5
189.5
189.5
BRITANNIA ROAD
184.5
188.0
6
186.5
186.5
187.0
186.0
185
184.0
185
5
186.5
OPTION #1
183.5
183
LF-4N
OPTION #2
LAND ACQUISITION
25m X 180m=0.225 ha.
6
TREMAINE ROAD
181.0
180.5
181.0
182.0
182.5
182.0
182.0
5
181.5
182.0
177
181.5
181.5
180
179.0

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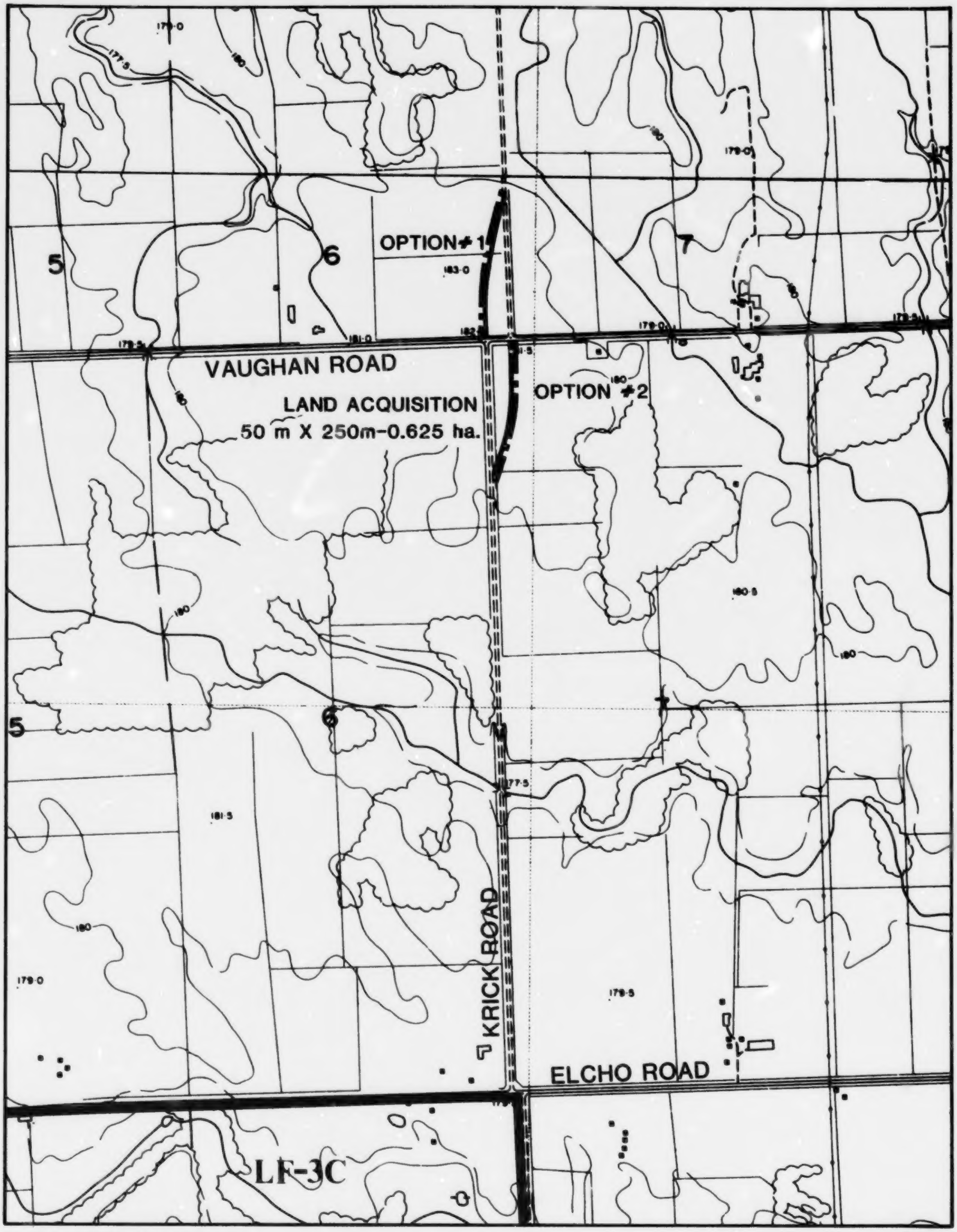
DILLON

LF-4N
PHASE 4A
JOG ELIMINATION OF BRITANNIA ROAD
AT TREMAINE ROAD
FIGURE 2


179·0
177·5
180
OPTION#1
183·0
5
6
7
179·0
179·5
181·0
182
181·5
179·0
179·5
VAUGHAN ROAD
180
OPTION #2
LAND ACQUISITION
50 m X 250m-0.625 ha.
180·5
180
180
5
6
177·5
181·5
180
KRICK ROAD
179·0
179·5
ELCHO ROAD
LF-3C

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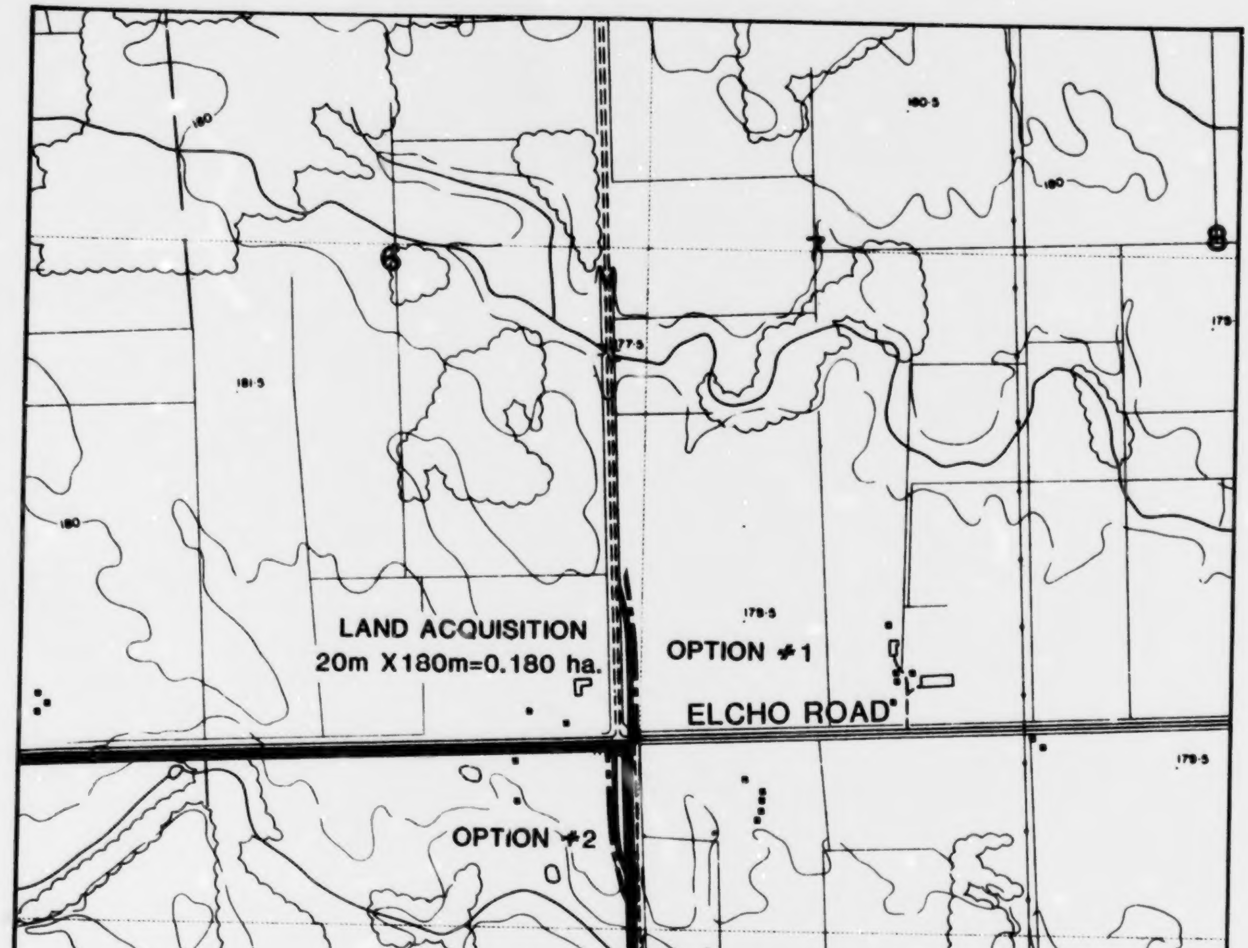
LF-3C

PHASE 4A

JOG ELIMINATION OF KRICK ROAD
AT VAUGHAN ROAD

FIGURE 3


LAND ACQUISITION
20m X180m=0.180 ha.
OPTION #1
ELCHO ROAD
OPTION #2
LF-3C
KRICK ROAD
6
7
8
5
180
181·5
177·5
180·5
179·5
179·0
178·0
178·0
175

OWMC Ontario Waste Management Corporation

Consultant

DILLON

LF-3C

PHASE 4A

JOG ELIMINATION OF KRICK ROAD
AT ELCHO ROAD

FIGURE 4

REFERENCES

1. Ministry of Transportation and Communications. 1978. Inventory Manual - Municipal Roads and Structures.

APPENDIX I

SENSITIVITY ANALYSIS OF SPECIAL WASTE SCENARIOS

1. BACKGROUND

During Phase 4A, two 300 000 t/a waste scenarios were developed by OWMC (reference 1) but only Scenario 2 was used as input for purposes of site selection (reference 5). These waste distributions are an estimate of the amount of waste, by source location, that would be treated at an OWMC treatment facility operating at design capacity.

Scenario 1 assumes that each of the 33 municipal area source locations send a portion of their waste to an OWMC receiver site, even if an existing treatment facility is closer. Consequently transportation distance and cost are not assumed to influence OWMC's market area. This scenario was viewed to be one of the two extreme situations and does not take account of the effect competing facilities will have on the special waste distribution to be received at an OWMC treatment facility (see Appendix F).

Scenario 2, representing the other extreme, assumes that OWMC's market area is determined almost exclusively by transportation cost and distance. OWMC's market is assumed to come from those generators closest to the site, unless those generators are closer to Tricil, the only other major waste treatment facility in Ontario (Reference 2). Based upon the methodology for constructing the Scenario 2 waste distributions (see Appendix F and Reference 4), there is one distribution pattern for sites north of Lake Ontario and another for sites south of the lake. Table 1 presents a comparison of the Scenario 1 and 2 waste distribution by source location.

The distribution of the special wastes attracted to the OWMC treatment facility on a Ontario-wide basis has a great influence on the potential transportation risks, and costs factors applied to the detailed comparative analysis. This special analysis examines the extent to which the potential transportation risks and costs will change due to the alternate waste distribution, and to provide qualitative conclusions regarding the effect on the transportation rankings for siting options.

2. COMPARISON OF POTENTIAL RISKS AND COSTS FOR THE TWO SCENARIOS

There were four transport characteristics considered in the comparison of these two special waste distribution scenarios:

- Annual Return Gate-to-Gate Transport Cost
- Annual One-Way Vehicle Movements.
- Annual One-Way Accident Frequency
- Annual One-Way Vehicle Kilometres

These four data sets were compiled based upon only the transport of special wastes, because the transport of additives and reagents, and intersite transfers was common for both Scenario 1 and Scenario 2.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1: COMPARISON OF SPECIAL WASTE DISTRIBUTIONS

MODEL ZONE NUMBER	LOCATION	SCENARIO 1 SPECIAL WASTE	SCENARIO 2 SPECIAL WASTE(2)	
			MILTON SITE AREA GROUPING	NIAGARA FALLS/WEST LINCOLN SITE AREA GROUPING
1	WINDSOR	18189	0	0
2	BRANTFORD	4824	85	163
3	ST CATHARINES-NIAGARA	18067	320	100168
4	ORILLIA	678	20	20
5	MIDLAND	622	3	19
6	TRENTON	678	5	20
7	TIMMINS	2269	16	16
8	HAMILTON	47283	15096	137806
9	CHATHAM	2495	0	0
10	OTHER S.W.-CLINTON	5449	144	0
11	SARNIA	8973	0	0
12	OTHER S.C.-HALIBURTON	7212	84	112
13	OTHER S.E.-RENFREW	12663	96	97
14	OTHER NC.&E-TROUT CREEK	5449	57	62
15	OTHER N.W.-GERALDTON	1814	11	11
16	THUNDER BAY	4252	8	8
17	BARRIE	2210	71	71
18	LONDON	6199	0	0
19	KITCHENER/WATERLOO	13251	8840	4863
20	TORONTO	76492	271386	42002
21	OSHAWA	13098	323	323
22	GUELPH	4655	3026	13837
23	SAULT STE. MARIE	13321	5	5
24	STRATFORD	2608	163	0
25	SUDBURY	8854	30	41
26	PETERBOROUGH	6187	136	210
27	NORTH BAY	1814	11	18
28	BELLEVILLE	1700	17	55
29	KINGSTON	969	8	8
30	BROCKVILLE	1872	13	20
31	OWEN SOUND	579	6	19
32	OTTAWA	3575	21	22
33	CORNWALL	1699	3	3
	TOTAL WASTE	300000	300000	300000

NOTES: 1. SOURCE: OWMC REFERENCE 3.
2. SOURCE: OWMC REFERENCE 4.

Table 2 indicates the transportation costs for each siting option for these two extremes in waste distribution. It can be seen that the difference in transportation cost range between $6.9 to 9.6 million dollars annually.

Table 3 compares the two scenarios in terms of the number of transportation vehicles arriving at each site. It is apparent from this table that there is little difference between the two scenarios from the perspective of the total number of vehicles generated by the OWMC facilities. However, the number of vehicles approaching the northern sites from 401 or from the QEW has a larger variation.

The one-way annual accident frequency and vehicle kilometres for each siting option are presented in Tables 4, 5, 6, and 7. These transport characteristics are used to estimate the number of special waste spills and accident involvements which would be attributed to OWMC generated traffic. The four tables also indicate the order of ranking of the six siting options in terms of these two transport characteristics.

Tables 4 and 5 present the data for the province-wide study area, while Tables 6 and 7 deal with the local and regional access routes.

In observing the province-wide data it is noted that in comparing the Scenario 2 distribution to the Scenario 1 situation, the accident frequency and vehicle kilometres increases significantly. In comparing the siting option rankings for these two extremes it is noted that the separation between the Milton siting options (PI-13N/LF-4N, and PI-1N/LF-4N) values and the rest of the options tends to increase for Scenario 1, and as a result in Scenario 1 the Milton sites rank higher than the West Lincoln sites, whereas in Scenario 2 the two areas were almost the same.

OWMC PHASE 4A-TRANSPORTATION

TABLE 2

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COST (in millions)

SCENARIO 1 AND 2 - SPECIAL WASTE ONLY

Siting Option	Scenario 2	Scenario 1	Difference
LF-3C	$4.5	$13.8	$9.3
LF-9C	$4.1	$13.2	$9.1
LF-1E	$4.5	$14.1	$9.6
PI-13N/LF-4N	$3.9	$10.8	$6.9
PI-1N/LF-4N	$3.9	$10.8	$6.9
PI-27E/LF-1E	$4.4	$13.9	$9.5

OWMC PHASE 4A-TRANSPORTATION

TABLE 3

ANNUAL ONE-WAY VEHICLE MOVEMENTS

SCENARIO 1 AND 2 - SPECIAL WASTES ONLY

Siting Option	Scenario 2	Scenario 1	Difference
LF-3C	19552	19595	+43
LF-9C	19552	19595	+43
LF-1E	19552	19595	+43
PI-13N/LF-4N: from 401	18547	15038	-3509
from QEW	999	4557	+3558
Total	19546	19595	+49
PI-1N/LF-4N: from 401	18547	15038	-3509
from QEW	999	4557	+3558
Total	19546	19595	+49
PI-27E/LF-1E	19552	19595	+43

OWMC PHASE 4A-TRANSPORTATION

TABLE 4

COMPARISON OF TRANSPORT CHARACTERISTICS
ANNUAL ONE-WAY ACCIDENT EVENT FREQUENCY
BASED ON ALL-VEHICLE RATE ON PROVINCE-WIDE ACCESS ROADS
SCENARIO 1 AND 2 - 300 000 t/a SPECIAL WASTE

Siting Option	Accident Event Frequency				Percent Increase
	Scenario 2	Rank	Scenario 1	Rank	
LF-3C	0.71	3	3.88	3	447
LF-9C	0.71	3	3.88	3	447
LF-1E	1.20	5	4.44	5	270
PI-13N/LF-4N	0.44	1	3.07	1	598
PI-1N/LF-4N	0.44	1	3.07	1	598
PI-27E/LF-1E	1.20	5	4.44	5	270

OWMC PHASE 4A-TRANSPORTATION

TABLE 5

COMPARISON OF TRANSPORT CHARACTERISTICS
ANNUAL ONE-WAY VEHICLE KILOMETRES ON THE PROVINCE-WIDE ACCESS ROADS
SCENARIO 1 AND 2 - 300 000 t/a SPECIAL WASTES

Siting Option	Annual One-way Vehicle Kilometres (in millions)				Percent Increase
	Scenario 2	Rank	Scenario 1	Rank	
LF-3C	1.00	1	4.82	3	382
LF-9C	1.00	1	4.82	3	382
LF-1E	1.51	5	5.49	5	264
PI-13N/LF-4N	1.03	3	3.97	1	285
PI-1N/LF-4N	1.03	3	3.97	1	285
PI-27E/LF-1E	1.51	5	5.49	5	264

OWMC PHASE 4A-TRANSPORTATION
TABLE 6
COMPARISON OF TRANSPORT CHARACTERISTICS
ANNUAL ONE-WAY ACCIDENT EVENT FREQUENCY
BASED ON ALL-VEHICLE RATE ON LOCAL AND REGIONAL ACCESS ROADS
SCENARIO 1 AND 2 - 300 000 t/a SPECIAL WASTE

Siting Option	Accident Event Frequency Scenario 2	Rank	Scenario 1	Rank	Percent Change
LF-3C	0.75	6	0.91	6	21
LF-9C	0.52	5	0.67	5	29
LF-1E	0.12	2	0.12	2	0
PI-13N/LF-4N	0.25	3	0.27	3	8
PI-1N/LF-4N	0.31	4	0.29	4	-9
PI-27E/LF-1E	0.04	1	0.04	1	0

OWMC PHASE 4A-TRANSPORTATION
TABLE 7
COMPARISON OF TRANSPORT CHARACTERISTICS
ANNUAL ONE-WAY VEHICLE KILOMETRES ON THE LOCAL AND REGIONAL ACCESS ROADS
SCENARIO 1 AND 2 - 300 000 t/a SPECIAL WASTES

Siting Option	Annual One-way Vehicle Kilometres (in millions) Scenario 2	Rank	Scenario 1	Rank	Percent Increase
LF-3C	0.52	6	0.61	6	17
LF-9C	0.32	5	0.40	5	25
LF-1E	0.08	2	0.08	2	0
PI-13N/LF-4N	0.16	3	0.19	4	19
PI-1N/LF-4N	0.18	4	0.19	3	5
PI-27E/LF-1E	0.02	1	0.02	1	0

Tables 6 and 7 list the transportation characteristics for the local and regional access portion of the total site access system. The differences between the two Scenarios for this study area are not as large as for the province-wide study area. In this study area there are no significant differences in the relative ranking of the siting options for either scenario.

3. CONCLUSIONS

In comparing the two 300 000 t/a waste scenarios in terms of the four transport considerations, the following conclusions were made:

1) The Scenario 1 special waste transport cost would be $6.9 to $9.6 million more than Scenario 2.

2) The one-way annual accident event frequency for the transport of special wastes along the province-wide access system would increase 270% to 598% for the Scenario 1 situation over Scenario 2.

3) The one-way annual vehicle-kilometres of special waste haulage over the province-wide access system would increase 264% to 382% for the Scenario 1 situation.

4) The one-way annual vehicle kilometres and accident frequency along the local and regional access system changes only slightly for the Scenario 1 situation.

5) The relative ranking of the siting options, in terms of accident frequency and vehicle kilometres for special waste haulage, does not change significantly for the Scenario 1 situation in either the province-wide or local and regional access route study areas.

Although the sensitivity analysis has demonstrated that the ranking of siting options is relatively insensitive to the two extremes of waste source quantity distribution (Scenario 1 and Scenario 2), there would be a difference in transportation impacts and potential risks associated with each scenario. These differences are best illustrated by the higher values determined for Scenario 1 over Scenario 2 in terms of accident event frequency and one-way vehicle kilometres of travel on the province-wide access system.

REFERENCES

1. OWMC. 1984. Preliminary estimates of allocations of 300 Kt/a Scenario among 14 waste classes (W.R. Lightowlers).

2. Monenco Limited. 1984. The Existing Waste Treatment Industry.

3. OWMC. 20 August 1984. Memorandum from D.W. Heeney, Phase 4A, Scenario 1, Transportation Analysis.

4. OWMC. 9 May 1985 Memorandum from D.W. Heeney, Revised Waste Distributions - Scenario 2, Enclosures (3).

APPENDIX J

ESTIMATION OF HEAVY TRUCK ACCIDENT RATES

1. BACKGROUND AND PURPOSE

During the OWMC Phase 3 transportation investigations it was noted that little empirical data exists on accident rates by vehicle type (e.g. passenger vehicles, light trucks, tractor- trailers, etc.). Although detailed breakdowns are normally tabulated on vehicle type in relation to accident involvement, little information exists on vehicle type exposure which involves the annual kilometreage of travel for each vehicle type grouping. Various jurisdictions have attempted to estimate the exposure, by vehicle type groupings, based upon estimates of fuel consumption or by spot observation counts taken on various road types. At best, these surveys produced only coarse estimates of actual exposure. The analysis time periods used are measured in a very small number of hours per annum and consequently, the use of these data for any formal risk assessment is questionable.

Based upon the Phase 3B special waste vehicle assignments, as taken from the transportation model, the majority of travel occured on the Ontario freeway network. Further analysis indicated that the minimum and maximum proportion of special waste freeway travel (measured in tonne-kilometres) among the facility operating options was 57% and 71% respectively.

During the Phase 4A analysis it was discerned that the proportion of freeway travel for the transport of all materials (measured in vehicle kilometres) ranged from 53% to 81% of the total transportation requirements for all candidate siting options.

Considering the high percentage of travel on the Ontario freeway system it was concluded that a special investigation was warranted to develop information that could be applied to estimate the heavy truck accident involvements. This analysis was based upon the total annual all-vehicle accident rates published by the MTC for provincial highways, and by other regional road authorities in relation to their facilities.

2. OVERVIEW

A review of the accident research literature revealed that only the toll road authorities in the United States had the control systems in-place that permitted an accurate assessment of exposure (measured in vehicle kilometres) for various vehicle types.

Based upon locational similarities between Ontario and nearby jurisdictions, the States of New Jersey, New York and Ohio were selected for detailed analysis. Requests were initiated to each of these states and their toll road authorities for accident and exposure data covering the five-year period 1978 through 1982.

In keeping with the purpose of this investigation, comparisons were made between the Ontario total accident experience with that of the three states to determine if there was consistency in the accident experience.

The second level of comparison was between the toll roads and their respective states.

The final level of comparison was then developed so that a relationship could be established between the truck accident and total vehicle accident rates. This relationship was then used as an input to the transportation accident frequency.

3. JURISDICTIONAL COMPARISON

Table 1 provides a comparison over the five-year period of the accident experience recorded in the states of New York, New Jersey and Ohio and the province of Ontario.

OWMC PHASE 4A - TRANSPORTATION
TABLE 1
FIVE YEAR ACCIDENT EXPERIENCE BY JURISDICTION (1978-1982)

	New York	New Jersey	Ohio	Ontario
Motor Vehicle Accidents	1,405,573	1,125,782	1,878,157	966,375
Vehicle km of travel (in millions)	621,680	413,233	578,337	351,160
Vehicle Accident Rate per MV km	2.26	2.72	3.25	2.75

All three of the United States jurisdictions experienced a greater number of accidents and greater exposure. However, the New Jersey experience comes closest to the Ontario experience, producing a vehicle accident rate very similar to Ontario's rate. Ohio's rate is approximately 18% higher than Ontario's, while the New York State rate is approximately 18% lower.

There are however differences between jurisdictions in accident reporting requirements in relation to the value of property damage involved. For example, during 1978 Ontario increased the reporting requirement from $200 to $400. The State of New Jersey used a $200 limit through 1982 and increased this to $500 for 1983. Ohio was using a $150 limit through 1980, while New York State has used a $400 figure for several years. Changes of this nature make it very difficult to make absolute comparisons between jurisdictions. However, these differences may not be of importance as drivers frequently report property damage only accidents before they have any idea as to the value of the property damage involved.

Table 2 provides a comparison of the accident experience for the toll roads in the three states with that of the Ontario freeways.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

FIVE-YEAR FREEWAY ACCIDENT EXPERIENCE BY JURISDICTION (1978-1982)

	New York Thruway	New Jersey Turnpike	Ohio Turnpike	Ontario Freeways
Motor Vehicle Accidents	23,628	14,696	7,797	58,085
Vehicle km of travel (in millions)	34,874	23,356	13,195	75,996
Vehicle Accident Rate per MV km	0.68	0.63	0.59	0.76

Based on these data it appears that Ontario's freeway accident experience, as measured by the vehicle accident rate, is somewhat higher than that of the three toll roads. It is difficult to completely explain this difference because many known and unknown factors are involved. Possibly one of the more significant factors that exists in relation to toll roads is the control that exists at the point of entry to these controlled systems. All entry vehicles and drivers are subject to visual inspection by the toll booth attendant who is encouraged to note unusual conditions. The attendant has the authority to prevent entry of a vehicle for any valid safety reason (e.g. faulty equipment, unsafe loading, etc.).

The attendant may also "flag" drivers in a questionable condition and ask for police surveillance, which may result in legal action (e.g. impoundment of a vehicle or arrest of a driver in violation of the traffic act.)

Considering the overall system controls that exist on toll roads as compared to similar non-toll facilities; it is not surprising that the toll road group has a somewhat superior accident frequency experience.

3.1 STATE AND TOLL ROAD EXPERIENCE

In the attempt to identify a surrogate facility that could be used to estimate truck accident frequency on the Ontario freeway network, data were compiled for the three states and toll road systems.

The accident data and mileage travelled by vehicle type were secured for the period 1978-1982 inclusive, from the following United States agencies:

- New York State Department of Motor Vehicles
- New York State Thruway Authority
- New Jersey Department of Transportation
- New Jersey Turnpike Authority
- Ohio Department of Highway Safety
- Ohio Turnpike Commission

The truck classification system on the turnpike facilities varied from state to state. The state-wide accident data used very general terminology in referring to truck types. Therefore, it was decided to use the broadest description to include all trucks rather than attempting to segregate heavy trucks from trucks in general. The following descriptions indicate the truck categories as provided by each surveyed agency:

State Agency	Descriptions
New Jersey Department of Transportation	Truck or Truck Tractor, Truck Combination
New Jersey Turnpike Authority	Class 2 - Vehicles having two axles other than type described under Class 1 (passenger car, light truck, etc.) Class 3 - Vehicle(s), single or in combination, having three axles Class 4 - Vehicle(s), single or in combination, having four axles Class 5 - Vehicle(s), single or in combination, having five axles Class 6 - Vehicle(s), single or in combination, having six or more axles
New York State Department of Motor Vehicles	Truck/Tractor Trailer
New York State Thruway Authority	Straight Truck, Tractor Trailer, Tandem Trailer
Ohio State Department of Highway Safety	Truck Tractor Semi-Trailer, Tractor Double-Trailer
Ohio Turnpike Commission	Class 2 to 9, i.e. greater than 7,000 lbs. gross weight

A further limitation in the data was the lack of an estimate of truck mileage by all the state-wide agencies and the New York State Thruway Authority.

In the accident analyses a number of key terms and measures of accident experience are used. The definitions for this terminology are included at the end of this appendix.

The accident data (reportable accidents) provided by the state agencies were summarized in a number of tables. Accident rates were calculated based on the exposure index of vehicle kilometres travelled. Where the information on truck exposure was available, a truck accident rate comparable to the all-vehicle rate was calculated.

These rates are a measure of the relative risk or opportunity for an accident to occur. They form a basis for comparison between states and also between vehicle types.

Table 3 provides a summary of the total five year accident experience of New York State, New Jersey, and Ohio and their turnpike or thruway facilities. The vehicle accident rate, vehicle involvement rate and injury accidents rate were all lower on the turnpike facilities compared to the state-wide experience. The vehicle accident rate was lower by a factor of 3.3 in New York State, 4.3 in New Jersey, and 5.5 in Ohio.

This situation is not surprising in that the toll roads have full access control and thus, accidents involving pedestrians and bicyclists are rare or non-occurring events. Furthermore, the design of the controlled access facilities eliminates all intersectional crossings at-grade and traffic control devices (e.g.

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

NEW YORK, NEW JERSEY AND OHIO STATE-WIDE AND TOLL ROAD ACCIDENT EXPERIENCE (1978-1982)

	New York		New Jersey		Ohio	
	State	Thruway	State	Turnpike	State	Turnpike
Total veh. km. (millions)	621,680	34,874	413,233	23,356	578,337	13,195
Total truck km. (millions)	N/A	N/A	N/A	3,869	N/A	4,619
Total veh. accidents	1,405,573	23,628	1,125,782	14,696	1,878,157	7,797
Total truck accidents	N/A	N/A	N/A	N/A	N/A	4,286
Vehicle accident rate[1]	2.26	0.68	2.72	0.63	3.25	0.59
Truck accident rate[2]	N/A	N/A	N/A	N/A	N/A	0.93
% Trucks using facility	N/A	N/A	N/A	14.0%	N/A	25.9%
Total veh. in accidents	2,558,659	34,079	2,077,295	24,043	3,424,001	11,080
Total veh. involvement rate[3]	4.12	0.98	5.03	1.03	5.92	0.84
Total trucks in accidents	244,387	7,521	170,932	5,198	70,095	5,090
Total trucks involvement rate[4]	N/A	N/A	N/A	1.34	N/A	1.10
% (Trucks/total veh. in accidents)	9.6%	22.1%	8.2%	21.6%	2.0%	45.9%
Injury accident rate[5]	1.42	0.19	1.04	0.20	0.94	0.18

Notes:

1. Number of vehicle accidents per million vehicle kilometres travelled.
2. Number of truck accidents per million truck kilometres travelled.
3. Number of vehicle involvements per million vehicle kilometres travelled.
4. Number of truck involvements per million truck kilometres travelled.
5. Number of injury accidents (including fatal accidents) per million vehicle kilometres travelled.

traffic control signals and stop signs). Consequently, the toll road accident rates range from 18% to 30% of the respective state-wide rates.

For all three states, truck involvements in accidents were noted and it was found that trucks accounted for a higher percentage of vehicles involved in accidents on the turnpikes than on the total state road system. In New York and New Jersey the percentages of truck involvements were 2.3 and 2.6 times higher on the turnpike than on the state road system. The Ohio figures show that truck involvements were 23 times higher, on a percentage basis, when comparing turnpike and state-wide statistics. One possible explanation for this situation would be that trucks form a high percentage of turnpike traffic (14% and 26% in New Jersey and Ohio, respectively), whereas many kilometres of roads in the state system would have an insignificant amount of truck traffic. The distortion of the Ohio figures could also be due to the Ohio Turnpike truck category definition which may include vehicles not classified as trucks by the Ohio State, New York State, and New Jersey definition. Thus, the truck involvements would be overstated.

The New Jersey Turnpike statistics provided the finest breakdown of accidents by type of vehicle. Table 4 shows a comparison of the accident figures for classes 2 through 6 (all trucks) versus classes 4 through 6 (heavy trucks). From this table, it can be seen that the heavy truck involvement rate is slightly higher (+5%) than the all-trucks involvement rate.

OWMC PHASE 4A - TRANSPORTATION

TABLE 4

NEW JERSEY TURNPIKE TRUCK ACCIDENT EXPERIENCE - ALL TRUCKS VERSUS HEAVY TRUCKS (1978-1982)

Number of Trucks	All Trucks (Classes 2-6)	Heavy Trucks (Classes 4-6)
Total Trucks	88,100,523	54,818,481
Total Vehicles (all classes)	627,346,243	627,346,243
% Trucks Using Facility	14.0%	8.7%
Accident Involvements		
Total Trucks in Accidents	5,198	3,861
Total Vehicles in Accidents	24,043	24,043
% (Trucks/Total Veh. in Accidents)	21.6%	16.1%
Total Truck Involvement Rate[1]	1.34	1.41
Total Veh. Involvement Rate[2]	1.03	1.03

NOTES:

1. Number of truck accident involvements per million truck kilometres travelled.
2. Number of all-vehicle accident involvements per million all-vehicle kilometres travelled.

Table 4 also provides a basis for comparing truck involvement in accidents with total vehicle involvement. A comparison of the total truck involvement rate with the rate for all vehicle involvements indicates that trucks experience a 30% higher involvement rate in accidents. When only the three heavy truck classes (four to six or more axles) are compared on the same basis, heavy trucks have a 37% higher involvement rate in accidents than the total vehicle involvement.

ONTARIO ACCIDENT EXPERIENCE

The Ontario Commission on Truck Safety (reference 1) published its report in April 1983. This document included summaries of accident statistics and motor vehicle registrations for the year 1981 and a breakdown of vehicle type accident involvement by type of road.

Table 5 was compiled from this report (reference 1).

OWMC PHASE 4A - TRANSPORTATION
TABLE 5
NUMBER OF VEHICLES INVOLVED IN ONTARIO MOTOR VEHICLE ACCIDENTS AND MOTOR VEHICLE REGISTRATION 1981

	Accident Involvement		Registrations	
Vehicle Type	Number	%	Number	%
Passenger Cars	288,793	73	4,192,961	79
Light Trucks	46,404	12	724,878	14
Straight Trucks	5,850	1	102,113	2
Tractors (with trailers)	7,037	2	69,147	1
Other Vehicles	36,848	10	210,322	4
TOTALS	384,932	100	5,299,471	100

Heavy trucks (straight trucks and tractor trailers) represent 3% of the total vehicle accident involvement. This same group also represents 3% of the total motor vehicle registrations during 1981. Considering only the individual vehicle types, "other vehicles" and "tractor trailers" have a greater involvement in accidents than is accounted for by the number of vehicles registered. Whereas the three remaining vehicle types demonstrate a less frequent involvement than is accounted for by vehicle registration. No specific conclusion can be drawn from these data in that no vehicle exposure, in terms of vehicle kilometres of travel, is available.

A further tabulation available from the Ontario report (reference 1) is the type and number of vehicles involved in Ontario accidents by type of road. This is set out in Table 6.

OWMC PHASE 4A - TRANSPORTATION
TABLE 6
NUMBER OF VEHICLES INVOLVED IN ONTARIO ACCIDENTS IN 1981 BY TYPE OF ROAD

	Provincial Hwys.		Other Roads		Private Property	
Vehicle Type	Number	%	Number	%	Number	%
Passenger Cars	43,884	15	234,039	81	11,331	4
Light Trucks	7,750	17	36,012	77	2,739	6
Straight Trucks	1,343	23	4,225	72	304	5
Tractors (with trailer)	3,663	52	3,057	43	338	5
TOTAL	56,640	16	277,333	80	14,712	4

The conclusions drawn by the author's of this Ontario document are:

- "the majority of automobile, light trucks and straight trucks involved in accidents are on non-provincial highways, and
- that only articulated trucks appear more likely to be involved in a motor vehicle accident on provincial highways."

Here again, no specific conclusion can be drawn as exposure data by road type and vehicle use is not available. However, there is an indication that the heavy truck group has a somewhat higher involvement in accidents in rural areas which appears to parallel the findings presented in Table 4.

4. TRUCK ACCIDENT INVOLVEMENT

Acknowledging the differences that exist in accident reporting requirements by jurisdiction, Table 1 identified a close similarity between vehicle accident rates in Ontario and the State of New Jersey. Also, it is noted that reasonable agreement exists between the accident rates on the New Jersey Turnpike and the Ontario freeway system (see Table 2).

With this general agreement and the recognition that the New Jersey Turnpike truck accident data is the most complete and detailed, the New Jersey Turnpike was selected as the surrogate for the Ontario freeway system.

The basic data required to calculate an adjustment factor to be applied to the Ontario accident experience to estimate truck accident involvement frequency rates, are presented in Tables 3 and 4. The right-most column in Table 4 (under the heavy truck classes) and column 4 of Table 3, provides the basis for initial adjustment.

The truck involvement rate is shown at 1.41 accident involvements per million truck kilometres, while the total vehicle involvement rate is 1.03 (accident involvements/MV km). Comparing these two figures (1.41 ÷ 1.03 = 1.37), indicates that the heavy truck group has a 37% greater accident involvement than all vehicle involvement.

Before this adjustment can be applied, it is essential that an all vehicle accident rate be first adjusted to reflect an all vehicle accident involvement rate. The information required to calculate this adjustment factor can be extracted from Table 3: New Jersey Turnpike data. The five-year average accident rate is 0.63 accidents/MV km, while the total vehicle involvement rate is as previously identified at 1.03. Thus, the conversion from all-vehicle accident rate to an all-vehicle involvement rate is 1.03 ÷ 0.63 = 1.635.

The two factors can now be combined (1.37 x 1.635 = 2.24); the combined factor of 2.24 is the required conversion factor to calculate the estimate number of OWMC site generated vehicles that would be involved in accidents for a particular year. This factor is applied directly to the calculated accident frequency rate for OWMC site generated transport vehicles. This application is made in the body of this report.

The method proposed for the calculation of OWMC site-generated transport vehicle accident involvements, does not produce the annual number of accidents that would occur on a link, but rather the number of transport vehicle accident involvements. This calculation procedure is viewed to be most useful as it avoids the complication of initially calculating a truck accident rate which must then be converted into the number of vehicle involvements, which is the output desired.

It is recognized that the application of New Jersey Turnpike data involves the acceptance of certain recognized limitations. Vehicle classification "4" includes a small number of non-heavy truck vehicles, including passenger cars or pick-up trucks hauling a two-axle trailer, and two-car tandem hookups.

The data for the five-year study period indicate that house trailers and utility trailers had a total of 206 accident involvements; however, their exposure measurement is not known. Also, not all of these vehicle combinations fall into class 4 as many would be class 3. This is particularly true for the utility trailer category where the number of single axle combinations considerably exceeds the dual axle group. Some of the house trailer combinations would also fall within class 3 as most of the 14 to 18 ft. units have single axles.

In conclusion, the calculation method developed to forecast heavy truck involvement in accidents, for the analysis of OWMC site generated truck traffic, is viewed to be the best available. Its application to the heavy transport vehicle requirements of each candidate site will produce the best estimates available of heavy truck accident involvement in accessing sites. The results can be used as an input to the detailed comparative evaluation for each site operating combination and as an input to risk assessment.

5. PREDICTION OF ACCIDENT TYPES

A more detailed stratification of truck accident frequency involves the prediction of accident types, i.e. property damage only, injury and fatal accidents. Table 7 presents the year-by-year breakdown over the five-year period on the New Jersey Turnpike. Based upon 100 accident occurrences, 1 accident would be fatal, 31 would involve injuries and 68 property damage.

Similar data were compiled for the Ontario accident experience covering the years 1980 and 1981, as presented in Table 8. It is observed that there is reasonable consistency between the two data sources and their differences can be rationalized in terms of the differences in operations. It is expected that the total injury accident experience in Ontario would be higher because pedestrian and bicycle accidents are not a factor in relation to accidents on the Turnpike. This difference is believed to explain why the frequency of injury accidents is greater in Ontario. It is also expected that the fatal accident percentage on the Turnpike would be higher than the overall experience in Ontario in that Turnpike operation results in an overall higher operating speed than that occurring in all areas of Ontario. The higher speed is more conducive to accident severity.

For purposes of the stratification of accidents by type in risk assessment, it is proposed to use the average experience noted for Ontario, although the difference is small between the two sources.

OWMC PHASE 4A - TRANSPORTATION

TABLE 7

NEW JERSEY TURNPIKE ACCIDENTS BY TYPE (1978-1982)

Year	Property Damage Only	Injury	Fatal	Total Accidents
1978	1,868	918	26	2,812
1979	2,139	987	34	3,160
1980	1,900	888	37	2,825
1981	2,098	856	29	2,983
1982	2,002	891	23	2,916
TOTALS	10,007	4,540	149	14,696
% of Totals	68.1	30.9	1	100.0

OWMC PHASE 4A - TRANSPORTATION

TABLE 8

ONTARIO ACCIDENTS BY TYPE[1] (1980-1981)

Year	Property Damage Only	Injury	Fatal	Total Accidents
1980	127,814	67,391	1,296	196,501
1981	129,846	67,292	1,234	198,373
TOTALS	257,660	134,683	2,530	394,873
% of Totals	65.3	34.1	0.6	100%

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1. Reference 2.

ACCIDENT TERMINOLOGY

Motor vehicle accident
Any collision of a motor vehicle and some other object or person with enough force to damage the motor vehicle(s) or the object struck or to injure occupants of the motor vehicle(s) involved.

Reportable Accidents
Fatal accidents, injury accidents and property-damage-only accidents above a prescribed dollar value. Thus, any accident study uses only a sample of all accidents.

Involvement
An accident involving three vehicles (e.g. two cars, one truck) would be counted as three involvements. This is important in comparing the relative safety of various vehicle types.

Exposure
The relative risk or opportunity for an accident. Commonly used exposure measures are number of vehicles, vehicle-kilometres of travel, cargo kilogram-kilometres of travel, and passenger-kilometres of travel.

Accident rate
The number of accidents divided by the exposure measure.

Involvement rate
The number of accident involvements by vehicle type divided by the exposure measure.

Injury accident rate
The total number of accidents in which one or more non-fatal injuries occurred divided by the exposure measure.

Fatal accident rate
The total number of accidents in which one or more fatalities occurred divided by the exposure measure.

REFERENCES

1. The Ontario Ministry of Transportation and Communications. April 1983. Report of the Ontario Commission on Truck Safety. ISBN 0-7743-8139-6. Ontario Ministry of Governmental Services.

2. Ministry of Transportation and Communications. 1981. Ontario Motor Vehicle Accident Facts.

3. Weckesser, Paul M., P.Eng., Chief Engineer and Robert F. Dale, P.Eng., Director of Operations. New Jersey Turnpike Authority accident and vehicle use data. These data were supplied in the form of annual accident summary reports prepared by staff and submitted to the Commissioners of the Authority. Summaries of these data appear in the annual reports of the Authority.

APPENDIX K

ACCIDENT INVOLVEMENT AND SPILL FREQUENCY FOR SPECIAL WASTE, INTER-SITE TRANSFERS AND ADDITIVE AND REAGENT VEHICLES

1. INTRODUCTION

The probability that OWMC site generated trucks would be involved in accidents while transporting special waste, additives, reagents or transfers between non-integrated sites, was used during Phase 4A of the site selection process to compare the various facility operating options. Two inputs to site selection factors were developed and latter used in the conversion to two-way accident involvements (See Appendix J, Truck Accident Involvement Rates, for an explanation of the conversion):

1. The expected annual number of accidents on the province-wide access road system to candidate sites.

2. The expected annual number of accidents on the local and regional access road system from the 400-series highways to the candidate sites.

The methodology, sources of information, assumptions, application and results of these inputs are discussed herein.

2. METHODOLOGY

During Phase 3B relative indicies of accident likelihood were used as measures for comparing the various receiver centroids. The tonne-kilometre totals for each of four road classifications in the highway network were multiplied by their five-year all-vehicle accident rate (See Table 1) to accumulate exposure x rate attribute. An "accident probability index" was developed and the receiver centroids were ranked by relative transportation safety (Reference 1, Chapters 18 & 19). The assumption implicit with this methodology was that links within a given road classification have similar roadway and operating characteristics. For Phase 3 work this assumption was acceptable since only relative indicies were calculated.

However, it is quite clear that substantial variations may exist from link to link. Therefore, in order to produce a more precise measure of the 'expected number of accidents' associated with a particular province-wide access route or local and regional access route, it was necessary to accumulate exposure x the historical rate attribute for each of the relevant links in the network. This amounts to undertaking an assignment of the movement of special waste, additive, reagent, and inter-site transfer vehicles, then dividing the product of the annual assigned vehicle flow, the link accident rate[1] and the link length by one million to produce the expected number of accidents for any given link.

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[1] The link accident rate is the historical number of accidents per million vehicle kilometers (MV km) during a specified time period and relating to that specific link and thus, when summed the entire transport network.

Separate calculations were made for the "province-wide" access system and the "local and regional" access system to reflect the different study areas evaluated during Phase 4A. For each access system component the annual number of accident occurrances was first determined based upon the year during which an OWMC treatment facility would be processing 300 000 tonnes of special waste. As the accident frequency calculation was based upon the historical all-vehicle accident rate, it was necessary to calculate the truck accident involvement rate for OWMC site generated trucks that would be involved in transporting all required materials.

To facilitate the calculations required for each of the nine facility operating options, an "environmental model" was developed through the use of the MOTORS programs. The network included in this model is identical to the transportation network but is enhanced to include an accident rate (accidents per MV km) for every link in the network that is used for transporting special waste, additives and reagents, and the inter-site transfers between non-integrated sites.

3. ENVIRONMENTAL MODEL INPUTS

The MOTORS suite of programs were instrumental in bringing together all the model inputs and carrying through the analysis. Each of the inputs to the environmental model are described below and illustrated in Figure 1.

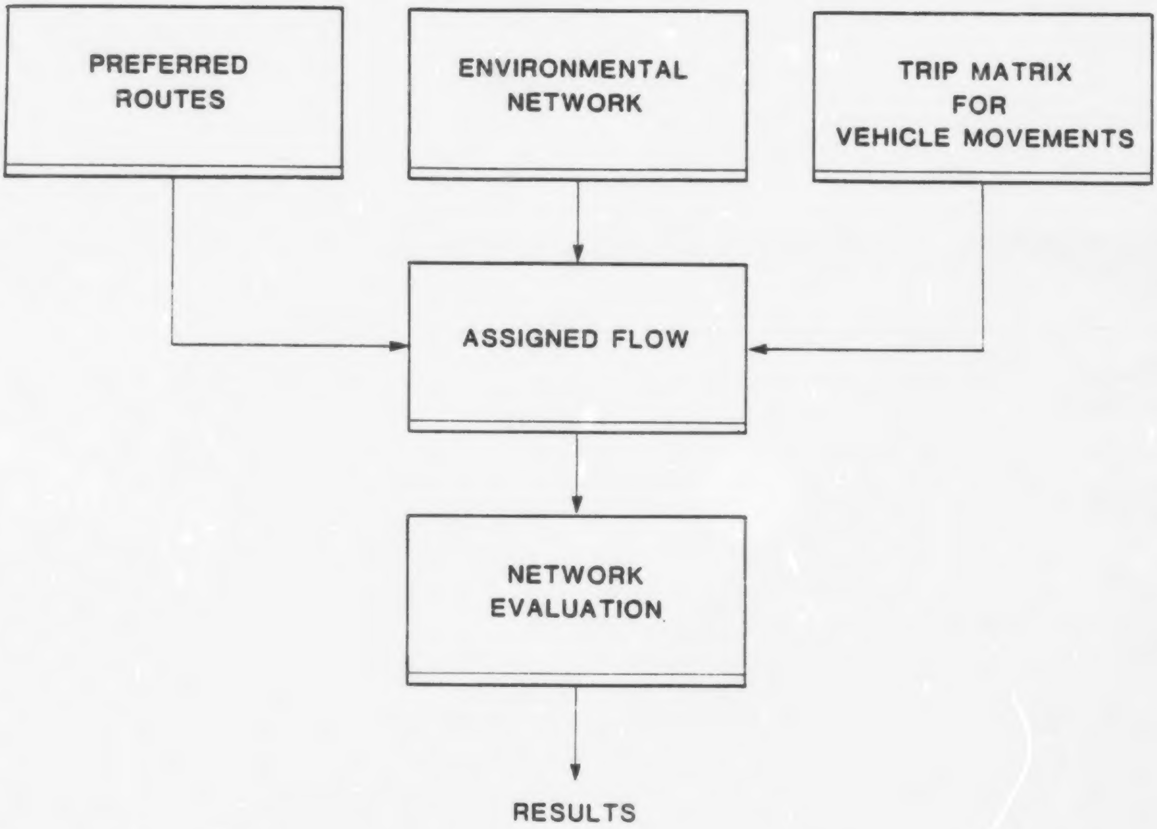
3.1 ENVIRONMENTAL NETWORK

The transportation network forms an integral part of the environmental network. The series of interconnecting links which represent the Ontario highway network are maintained in order to model the expected number of accidents on a link basis. The link distance included in the transportation network is replaced by the product of the link distance and the link accident rate (per MV km). Therefore, when the network evaluation program attempts to accumulate the vehicle-kilometres (the product of the link assignment and link distance), it will be accumulating the product of the link assignment, link distance and the link accident rate for each link in the network. The results of these calculations when divided by one million produce the "expected number of accidents" (based on the historical all vehicle accident rate) for the trip movements modelled.

3.1.1 Centroid connectors

Although centroid connector link distances were included for the transportation network, centroid connector accident rates were not estimated for within the environmental network. As discussed in Section 3.3 of Appendix E, the centroid connector links are included to model intra-zonal movements from the unidentified waste producer locations to the point where they are assumed to load onto the highway network. Since these links represent average trip movements originating in a given zone, the distance assigned represents many routes made up of various road types and therefore no attempt was made to assign an accident rate to these links.

The two-way annual accident involvements (calculated from the expected number of accidents) for both the province-wide and local and regional access roads as tabulated in this appendix, excludes travel on centroid connector links because of the lack of appropriate accident and intra-zonal route data at the source municipal areas (zones). However, they are included in the vehicle kilometres of travel, as taken from the transporation



PREFERRED ROUTES
ENVIRONMENTAL NETWORK
TRIP MATRIX FOR VEHICLE MOVEMENTS
ASSIGNED FLOW
NETWORK EVALUATION
RESULTS

ENVIRONMENTAL MODEL INPUTS

FIGURE 1

model, because a distance was assumed for these centroid connector links. The two-way annual accident involvement and the one-way annual vehicle kilometers were used as inputs to calculate "accident related spills" and "non-accident related spills" respectively. These two components summed together produce the "total spills" and this was calculated for the province-wide and local and regional access road systems.

A sensitivity analysis was carried out to determine what effect, if any, the inclusion of an average accident rate for the centroid connector links would have on the accident involvement and spill data. This accident rate was based on MTC Ontario-wide, five year average accident experience and exposure data, for all road types (see Table 1). The rate assumed for the centroid connector link was 2.75 accidents per million vehicle kilometers.

The analysis revealed that 0.338 and 0.208 annual accident related spills would be added to the site options in the Milton and West Lincoln/Niagara Falls site area groupings respectively, for the province-wide access system (excluding local and regional access roads).

This analysis also revealed that 3.446 and 2.124 "two-way annual accident involvements" would be added to the site options in the Milton and West Lincoln/Niagara Falls site area groupings respectively, for the province-wide access system.

The two Scenario 2 waste distributions representing the Milton, and West Lincoln/Niagara Falls site area groupings, are dissimilar as to the quantity of waste estimated to be received from the municipal source sites (Appendix F describes their development). The resultant difference in vehicle travel requirements produces variations in the exposure (vehicle kilometers) over the sum of the centroid connector links. With the accident rate for all centroid connectors fixed at an assumed 2.75 accidents/MV km and given the unique distance assumed to represent each municipal zone (methodology and rationale employed in assigning lengths to the centroid connectors is discussed in Appendix E, Section 3.3), the difference in exposure between the two waste distributions accounts for the variation in accident and spill data presented.

The analysis has shown that the intra-zonal travel can produce a significant amount of accident related spills and accident involvements, depending upon the types of routes used for this travel. However it should be noted that this part of the province-wide study area, represents movements of special wastes which would probably be unaffected by implementation of an OWMC waste treatment facility. Intra-zonal movement of wastes are taking place at the present time, the OWMC centralized facility will only have an impact on the movement of special wastes after they leave the waste producing areas. Therefore it was considered unnecessary to consider these waste movements in order to carry out the Phase 4A comparative analysis. The intra-zonal movement of wastes may be a consideration in further OWMC studies when more details on the type of roads used for this haulage are available.

3.2 ACCIDENT RATES

The accident rate for each link along the preferred routes was the other major input to the environmental network. The accident data used for 400-series and King's highways were based on accident statistics from the years 1980 to 1982. This information is held in an accident data base compiled and managed by the Traffic Management and Engineering Department of the Ontario Ministry of Transportation and Communication (MTC).

From this data base, only the information relating to those links along the preferred routes in the transportation network were extracted. In most cases the road sections described in the MTC accident data base were shorter than those in the transportation network. This necessitated aggregating the shorter road sections in order to calculate the link accident rate.

For links along the preferred routes that followed regional roads the accident data were obtained from the appropriate regional municipality. Regional road links were only used in the vicinity of the receiver sites; consequently, accident data from only two Regional municipalities were used.

There were also a few local road sections along the local and regional access routes for which accident statistics were not available. With the expectation that these road sections would be physically upgraded to a condition equal to or better than provincial secondary highways, the five-year all vehicle accident rate for secondary highways was assumed (see Table 1).

OWMC PHASE 4A - TRANSPORTATION
TABLE 1
FIVE YEAR SUMMARY OF ACCIDENT DATA BY ROAD CLASS, 1978-1982

	No. of Accidents	Million Vehicle Kilometres (MV km) of Travel	Accident Rate/MV km
Freeways	58 085	75 995.8	0.76
King's Highway	101 311	84 763.9	1.20
Secondary Highways	6 101	3 794.9	1.61
Other Roads	800 836	186 579.1	4.29

1. Provincial Highways, Traffic Volumes: King's Highway and Secondary Highways, 1982, Ontario Ministry of Transportation and Communications.

Furthermore, there were isolated instances where a King's Highway road section was entirely located within an urban municipality (e.g. a network link adjacent to the Windsor source point) and for which accident data were not provided by the MTC data base. With the expectation that urban roads would have a higher accident rate than highway road classes, the five-year all vehicle accident rate for "other roads" was assumed.

3.3 INCLUSION OF FREEWAY RAMPS

Additional links were added to the transportation network, and therefore the environmental network, to represent essential on-and-off ramps to the freeway system. They were included at all junctions of 400-series highways with King's highways and regional roads along the preferred routes. The ramp links are necessary to allow ramp accident data to be included in the calculations of the accident involvement indicators. Ramp accident data are not included with the accident statistics provided by MTC, but separate analysis has shown them to be higher than the 400-series highways (reference 2). Therefore, the accident rate assumed for the ramp links was 15% greater than the MTC five-year all vehicle accident rate for freeways (see Table 1). This assumption is not viewed to be highly sensitive, as the distance travelled on interchange ramps is very small in comparison to the total travel distance from a source to a receiver site.

3.4 PREFERRED ROUTES

The preferred routes (developed and refined in a separate analysis) from each source site to each receiver site, guide the assignment of the trip matrix over the appropriate links in the environmental network. For a further discussion of the preferred routes see sections in Appendix E, "Transportation Model Update".

3.5 TRIP MATRIX

The modelling of the complex flow of special waste, additives, reagents and inter-site transfer vehicles can be accommodated in the trip matrix by specifying the number of trip movements from each origin (Source Zone) to each destination (Candidate Site) in the network.

3.6 TRUCK ACCIDENT INVOLVEMENTS

The environmental model produces the expected annual frequency of OWMC site generated truck transport accidents on the total access system and is based upon the historical all-vehicle accident frequency rate per MV km. To provide an estimate of OWMC site generated truck transport accident involvement, it was necessary to apply an adjustment factor which reflects both the number of vehicles involved in accidents and the differences between all vehicle and heavy truck involvement frequencies. This factor was developed through a special analysis undertaken and reported in Appendix J. The resulting factor was applied to the environmental model accident frequency outputs to produce the annual accident involvements.

4. RESULTS

Table 2 presents the two-way annual accident involvements and Table 3 the one-way annual vehicle kilometres for the local and regional access roads, the province-wide access roads and the total access road system for each of the nine facility operating options. These values have also been disaggregated to show the contribution that the special waste, additives and reagents and inter-site transfer vehicles make to that total. Both the

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT FOR THE TOTAL ACCESS ROAD SYSTEM

Site/Site Combinations and Operating Case	Two-Way Annual Accident Involvement[1] Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	3.380	3.170	6.550
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.568	1.188	1.756
TOTAL	3.948	4.358	8.306
LF-9C			
Special Waste Transport	2.344	3.171	5.515
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.428	1.189	1.617
TOTAL	2.772	4.360	7.132
LF-1E			
Special Waste Transport	0.528	5.390	5.918
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.071	1.533	1.604
TOTAL	0.599	6.923	7.522

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT FOR THE TOTAL ACCESS ROAD SYSTEM

(Continued)

	Two-Way Annual Accident Involvement[1]		
Site/Site Combinations and Operating Case	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	1.109	1.964	3.073
Inter-Site Transfers	2.296	-	2.296
Additives & Reagent Transport	0.145	0.482	0.627
TOTAL	3.550	2.446	5.996
PI-1N/LF-4N			
Special Waste Transport	1.411	1.962	3.373
Inter-Site Transfers	1.243	-	1.243
Additives & Reagent Transport	0.195	0.481	0.676
TOTAL	2.849	2.443	5.292
PI-27E/LF-1E			
Special Waste Transport	0.172	5.388	5.560
Inter-Site Transfers	0.260	-	0.260
Additives & Reagent Transport	0.023	1.532	1.555
TOTAL	0.455	6.920	7.375

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT FOR THE TOTAL ACCESS ROAD SYSTEM

(Continued)

Site/Site Combinations and Operating Case	Two-Way Annual Accident Involvement[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 3 SEPARATE INCINERATOR			
PI-13N/LF-4N			
Special Waste Transport	3.158	1.963	5.121
Inter-Site Transfers	0.320	-	0.320
Additives & Reagent Transport	0.458	0.478	0.936
TOTAL	3.936	2.441	6.377
PI-1N/LF-4N			
Special Waste Transport	3.200	1.961	5.161
Inter-Site Transfers	0.173	-	0.173
Additives & Reagent Transport	0.463	0.482	0.945
TOTAL	3.836	2.443	6.279
PI-27E/LF-1E			
Special Waste Transport	0.461	5.390	5.851
Inter-Site Transfers	0.036	-	0.036
Additives & Reagent Transport	0.067	1.582	1.599
TOTAL	0.564	6.922	7.486

NOTE:

1. Annual accident involvement is based upon receipt of 300,000 tonnes of special wastes per annum and includes the process reagents and additives required to treat this quantity.

OWMC PHASE 4A - TRANSPORTATION
TABLE 3
ONE-WAY ANNUAL VEHICLE KILOMETRES FOR THE TOTAL ACCESS ROAD SYSTEM

	One-Way Annual Vehicle Kilometres[1]		
Site/Site Combinations and Operating Case	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	521,142	1,003,290	1,524,432
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	84,288	416,687	500,975
TOTAL	605,430	1,419,977	2,025,407
LF-9C			
Special Waste Transport	315,846	1,003,290	1,319,136
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	56,631	416,687	473,318
TOTAL	372,477	1,419,977	1,792,454
LF-1E			
Special Waste Transport	76,253	1,507,140	1,583,393
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	10,273	511,511	521,784
TOTAL	86,526	2,018,651	2,105,177

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

ONE-WAY ANNUAL VEHICLE KILOMETRES FOR THE TOTAL ACCESS ROAD

(Continued)

	One-Way Annual Vehicle Kilometres[1]		
Site/Site Combinations and Operating Case	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	163,005	1,025,280	1,188,285
Inter-Site Transfers	122,756	0	122,756
Additives & Reagent Transport	20,852	237,822	258,674
TOTAL	306,613	1,263,102	1,569,715
PI-1N/LF-4N			
Special Waste Transport	184,731	1,025,280	1,210,011
Inter-Site Transfers	45,677	0	45,677
Additives & Reagent Transport	24,765	237,822	262,587
TOTAL	255,173	1,263,102	1,518,275
PI-27E/LF-1E			
Special Waste Transport	23,462	1,507,140	1,530,602
Inter-Site Transfers	38,540	0	38,540
Additives & Reagent Transport	3,161	511,511	514,672
TOTAL	65,163	2,018,651	2,083,814

OWMC PHASE 4A - TRANSPORTATION

TABLE 3

ONE-WAY ANNUAL VEHICLE KILOMETRES FOR THE TOTAL ACCESS ROAD

(Continued)

Site/Site Combinations and Operating Case	One-Way Annual Vehicle Kilometres[1] Local & Regional Access Road	Province-Wide Access Road	Total Access Road
CASE 3 SEPARATE INCINERATOR			
PI-13N/LF-4N			
Special Waste Transport	223,157	1,025,280	1,248,437
Inter-Site Transfers	17,097	0	17,097
Additives & Reagent Transport	30,364	237,822	268,186
TOTAL	270,618	1,263,102	1,533,720
PI-1N/LF-4N			
Special Waste Transport	225,654	1,025,280	1,250,934
Inter-Site Transfers	6,362	0	6,362
Additives & Reagent Transport	30,737	237,822	268,559
TOTAL	262,753	1,263,102	1,525,855
PI-27E/LF-1E			
Special Waste Transport	66,352	1,507,140	1,573,492
Inter-Site Transfers	5,368	0	5,368
Additives & Reagent Transport	9,600	511,511	521,111
TOTAL	81,320	2,018,651	2,099,971

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1. Annual vehicle kilometres are based upon receipt of 300,000 tonnes of special wastes per annum and includes the process reagents and additives required to treat this quantity.

accident involvement and vehicle kilometre data are based upon the receipt of 300,000 tonnes per annum of special wastes and the additive and reagent quantities for total solidification.

Table 4 presents the "total annual number of spills" disaggregated to show the "non-accident-related spills" and "accident-related spills". The non-accident-related spills are based on one spill per million vehicle kilometres, while the accident-related spills are derived using a conditional probability of .196 applied to the "one-way annual accident involvement" (or .098 to the "two-way annual accident involvement"). These calculations are also based upon the receipt of 300 000 tonnes per annum of special waste and the process additive and reagent quantities for total solidification.

Table 5 presents information concerning the vehicle kilometres of travel along the province-wide system. These data indicate that the majority of the province-wide travel occurs along the freeway system (75.3% to 83.2%). By combining this information with the data from Table 3, it is evident that freeway travel makes up between 53% and 81% of the total system vehicle kilometres.

UWMC PHASE 4A TRANSPORTATION

TABLE 4: ANNUAL NUMBER OF SPILLS FOR THE TOTAL ACCESS ROAD SYSTEM - TOTAL SOLIDIFICATION

Site/Site Combination and Operating Case	Local & Regional Access Roads			Province Wide Access Roads			Total Access Road System		
	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total
CASE 1 INTEGRATED									
LF-3C									
Special Waste Transport	0.521	0.331	0.852	1.003	0.311	1.314	1.524	0.642	2.166
Additive & Reagent Transport	0.084	0.056	0.14	0.417	0.116	0.533	0.501	0.172	0.673
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.605	0.387	0.992	1.42	0.427	1.847	2.025	0.814	2.839
LF-9C									
Special Waste Transport	0.316	0.23	0.546	1.003	0.311	1.314	1.319	0.54	1.86
Additive & Reagent Transport	0.057	0.042	0.099	0.417	0.116	0.533	0.473	0.158	0.632
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.372	0.272	0.644	1.42	0.427	1.847	1.792	0.699	2.491
LF-1E									
Special Waste Transport	0.076	0.052	0.128	1.507	0.528	2.035	1.583	0.58	2.163
Additive & Reagent Transport	0.01	0.007	0.017	0.512	0.15	0.662	0.522	0.157	0.679
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.087	0.059	0.145	2.019	0.678	2.697	2.105	0.737	2.842
CASE 2 SEPARATE LANDFILL									
PI-13N/LF-4N									
Special Waste Transport	0.163	0.109	0.272	1.025	0.192	1.217	1.188	0.301	1.489
Additive & Reagent Transport	0.021	0.014	0.035	0.238	0.047	0.285	0.259	0.061	0.32
Inter-Site Transfers	0.123	0.225	0.348	0	0	0	0.123	0.225	0.348
TOTAL	0.307	0.348	0.655	1.263	0.239	1.502	1.57	0.588	2.157
PI-1N/LF-4N									
Special Waste Transport	0.185	0.138	0.323	1.025	0.192	1.217	1.21	0.331	1.541
Additive & Reagent Transport	0.025	0.019	0.044	0.238	0.047	0.285	0.263	0.066	0.329
Inter-Site Transfers	0.046	0.122	0.167	0	0	0	0.046	0.122	0.167
TOTAL	0.255	0.279	0.534	1.263	0.239	1.502	1.518	0.519	2.037
PI-27E/LF-1E									
Special Waste Transport	0.023	0.017	0.04	1.507	0.528	2.035	1.531	0.545	2.075
Additive & Reagent Transport	0.003	0.002	0.005	0.512	0.15	0.662	0.515	0.152	0.667
Inter-Site Transfers	0.039	0.025	0.064	0	0	0	0.039	0.026	0.064
TOTAL	0.065	0.045	0.11	2.019	0.678	2.697	2.084	0.723	2.807

OWMC PHASE 4A - TRANSPORTATION

TABLE 4: ANNUAL NUMBER OF SPILLS FOR THE TOTAL ACCESS ROAD SYSTEM - TOTAL SOLIDIFICATION

Site/Site Combination and Operating Case	Local & Regional Access Roads			Province Wide Access Roads			Total Access Road System		
	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total
CASE 3 SEPARATE INCINERATOR									
PI-13N/LF-4N									
Special Waste Transport	0.223	0.309	0.533	1.025	0.192	1.217	1.248	0.501	1.75
Additive & Reagent Transport	0.03	0.045	0.075	0.238	0.047	0.285	0.268	0.092	0.36
Inter-Site Transfers	0.017	0.031	0.048	0	0	0	0.017	0.031	0.048
TOTAL	0.271	0.386	0.656	1.263	0.239	1.502	1.534	0.625	2.158
PI-1N/LF-4N									
Special Waste Transport	0.226	0.314	0.539	1.025	0.192	1.217	1.251	0.506	1.757
Additive & Reagent Transport	0.031	0.045	0.076	0.238	0.047	0.285	0.269	0.092	0.361
Inter-Site Transfers	0.006	0.017	0.023	0	0	0	0.006	0.017	0.023
TOTAL	0.263	0.376	0.639	1.263	0.239	1.502	1.526	0.615	2.141
PI-27E/LF-1E									
Special Waste Transport	0.066	0.045	0.112	1.507	0.528	2.035	1.573	0.573	2.146
Additive & Reagent Transport	0.01	0.007	0.016	0.512	0.15	0.662	0.521	0.157	0.678
Inter-Site Transfers	0.005	0.004	0.009	0	0	0	0.005	0.004	0.009
TOTAL	0.081	0.055	0.137	2.019	0.678	2.697	2.1	0.734	2.834

Notes: 1. Based on one spill per million vehicle kilometers
2. Derived using a conditional probability of 0.196 applied to the one-way OWMC annual accident involvement.

TABLE 5: FREEWAY KILOMETERS AS A PROPORTION OF PROVINCE-WIDE VEHICLE KILOMETERS

Site/Site Combination and Operating Case	Province-Wide Annual Vehicle Kilometers	Freeway Vehicle Kilometers	% of Prov-Wide Annual Vehicle Kilometers	Prov-Wide Veh.-km Other Rds
CASE 1 INTEGRATED				
LF-3C				
Special Waste Transport	1003290	690670	68.8	312620
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	416687	378080	90.7	38607
TOTAL	1419977	1068750	75.3	351227
LF-9C				
Special Waste Transport	1003290	690670	68.8	312620
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	416687	378080	90.7	38607
TOTAL	1419977	1068750	75.3	351227
LF-1E				
Special Waste Transport	1507140	1207440	80.1	299700
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	511511	472900	92.5	38611
TOTAL	2018651	1680340	83.2	338311
CASE 2 & CASE 3 PARTIALLY INTEGRATED				
PI-13N/LF-4N				
Special Waste Transport	1025280	720010	70.2	305270
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	237822	200350	84.2	37472
TOTAL	1263102	920360	72.9	342742
PI-1N/LF-4N				
Special Waste Transport	1025280	720010	70.2	305270
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	237822	200350	84.2	37472
TOTAL	1263102	920360	72.9	342742
PI-27E/LF-1E				
Special Waste Transport	1507140	1207440	80.1	299700
Inter-Site Transfers	0	0	0.0	0
Additive & Reagent Transport	511511	472900	92.5	38611
TOTAL	2018651	1680340	83.2	338311

REFERENCES

1. M.M. Dillon Limited. 1984. OWMC Site Selection Process, Phase 3B Selection of Candidate Sites - Transportation, 117 pp, Appendices.

2. Pilorusso Research Associates Inc. 1983. Background Paper - Transportation of Special Wastes in Ontario.

APPENDIX L
NOISE LEVEL CHANGE

1. INTRODUCTION

Early during the Phase 4A site selection process, M.M. Dillon Limited was instructed to engage the services of a noise specialist to assess the noise impacts associated with the OWMC proposal for the development of special waste treatment and disposal facilities. The firm, S.S. Wilson & Associates, Consulting Engineers (radio, television, sound, acoustics noise control) was retained as a sub-consultant to M.M. Dillon Limited - Transportation on 19 October 1984.

The OWMC site selection process during Phase 4A required that noise impacts be determined for the eight candidate sites selected at the end of the Phase 3B program. More specifically, noise effects and impacts were to be addressed in relation to the following:

a) Measurement of ambient noise levels along the preferred local and regional access routes between the 400-series highway and the candidate sites.

b) Calculation of the forecasted year 2000 ambient noise levels along the local and regional access road system, based upon forecasted traffic growth on the system without OWMC generated truck transport traffic.

c) Calculation of the incremental change in local and regional access road noise (year 2000), resulting from the addition of OWMC generated truck transport volumes.

d) Measurement of ambient noise levels surrounding each of the OWMC candidate sites.

e) Calculation of the incremental change in candidate site noise levels for the year 2000 considering both daytime and nighttime operations that would occur at the candidate sites.

f) A determination of the width of a noise impact corridor flanking a rail service spurline to candidate sites, in the event that OWMC should elect to provide a spurline connection to the site for the conveyance of the required process additions and reagents for the treatment of special wastes.

g) The development of preliminary mitigation measure concepts for reducing noise impacts at a candidate site.

1.1 OVERVIEW

This appendix provides a summary of the methods, procedures, results and limitations of the noise investigations that were conducted and applied (by others) during Phase 4A of the site selection process in the search for a preferred OWMC treatment site(s).

Both M.M. Dillon Limited - Transportation and Monenco Limited provided basic inputs to the analysis conducted by S.S. Wilson &

Associates. M.M. Dillon Limited - Transportation's input included these items:

- identification of site access routes (see Chapter 4) and rail spurline access to sites (see Chapter 5);
- existing and year 2000 forecasted traffic volumes and percentage of heavy trucks on local and regional access routes, and
- year 2000 OWMC generated truck volume forecasts on access roads leading to each candidate site.

Monenco Limited provided the following data inputs:

- location of the operating plant within the candidate sites and internal plant arrangements;
- identification of noise generating equipment within the operating area;
- landfill cell arrangements within the site boundary and types of equipment that would be employed for cell preparation, landfilling and capping of a completed cell; and
- a description of operating events that would occur during a 24-hour period on a normal working day.

These data inputs were then used by S.S. Wilson & Associates in the preparation of noise corridor forecasts along local and regional access routes, and at each candidate site. With respect to these two study areas, it was necessary for S.S. Wilson & Associates to produce separate analyses based upon the partially integrated siting options involving Case 1 (integrated site), Case 2 (separate landfill), and Case 3 (separate incinerator). The difference in noise impacts was also used as an input to the partially integrated siting options comparison (see Chapter 7). Following the selection of appropriate partially integrated siting options, the information developed by S.S. Wilson & Associates was applied by the Institute of Environmental Research in the impact assessment undertaken during detailed comparative analysis.

During the later stages of Phase 4A investigations, the use of partial solidification was examined in a sensitivity analysis. This process reduces site-related transportation requirements in that the quantity of process additives and reagents is reduced, as well as the volume of solidifying materials that must be transported from a PI site to a LF site under Case 2 operations. Consequently, S.S. Wilson & Associates undertook additional noise calculations to document the reduction in noise corridor widths along local and regional access routes as an input to this sensitivity analysis (see Section 8.4 of Chapter 8).

During the later stages of preferred site(s) selection, S.S. Wilson & Associates also provided the site selection team with the following preliminary assessment of means by which site noise could be mitigated:

- noise suppression at plant noise sources; and
- site perimeter treatment to reduce off-site noise.

However, these opportunities for off-site noise level reduction could not be directly applied during Phase 4A analysis, due mainly to limitations in the methods employed for Phase 4A. The application of these techniques will receive further consideration during the future Phase 4B.

2. GENERALIZED METHODOLOGY

2.1 PURPOSE

This appendix is presented as a summary of the noise investigation documentation prepared by S.S. Wilson & Associates. Only the highlights are presented herein in terms of methodology and results. The results of the noise analysis were then applied by the Institute of Environmental Research for the development of factors/indicators which were applied in the detailed comparative analysis of candidate sites.

2.1.1 Source documents

S.S. Wilson & Associates, during the course of their engagement, produced five bound reports and two supplementary letter reports. These reports and unbound exhibits are on file with OWMC:

(a) Report W84-214-1, Traffic Noise Levels Along Access Routes to Candidate Sites, 27 December 1984, Amendements 14 March 1985.

(b) Report W84-214-2, Predicted Noise Levels OWMC Operations - Candidate Sites, 11 January 1985.

(c) Report W84-214-3, Methodology and General Data, 6 January 1985

(d) Report W84-214- No. 4, Traffic Noise Levels Along Access Routes, Partial Solidification, 17 June 1985.

(e) Report W84-214 No. 5, Typical Leq Noise Level Contours Phy/Chem/Incin Plant, 22 June 1985 (replaced plant noise analysis contained in Report W84-214-2).

(f) Letter Report, 8 November 1984, Train Noise Trends, File W84-214.

(g) Letter Report, 21 February 1985, Site Noise Level Contours, File W84-214 (contains updates to Report W84-214-2).

2.2 NOISE LEVEL PARAMETERS, INSTRUMENTATION AND MEASUREMENT PROCEDURES

2.2.1 Equivalent energy noise levels (Leq)

The Leq in dBA noise level parameter is used throughout this study. This parameter has been selected for use as the primary noise level descriptor by the Ontario Ministry of the Environment and is used as the primary descriptor in their Model Municipal Noise Control By-Law. This Model By-Law is the basis for noise control regulations in the various municipalities in Ontario.

Since the noise levels around OWMC sites will be subject to MOE approvals the Leq descriptor is used to identify OWMC noise levels in the noise study reports.

Leq and dBA are defined in MOE Publication "NPC 101 - Definitions" as follows:

dBA: The decibel (dB) is a dimensionless measure of sound pressure level. "A weighting" is the frequency weighting characteristic intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound.

Leq: The equivalent energy sound level is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is measured in dBA.

2.2.2 Instrumentation

All instrumentation used for on-site measurements meets the specifications set out in MOE Publication "NPC 102 - Instrumentation".

2.2.3. Procedures

Measurement procedures used for on-site measurements followed the procedures specified in MOE Publication "NPC 103 - Measurement Procedures".

2.3 ROAD TRAFFIC NOISE LEVELS AND CORRIDORS

2.3.1 Preliminary noise corridors

The width of a corridor along access route options was identified wherein the addition of OWMC truck transport would likely create a noise impact on existing residential uses. This corridor was used by others for purposes of comparative evaluation of access routes. The likely width of the noise corridor was defined considering existing background traffic levels and heavy commercial vehicle percentage and an estimated OWMC heavy truck surcharge of 200 two-way vehicle movements over a 10-hour operating day. The following preliminary guidelines for analysis were developed for use by other consultants:

- in urbanized areas, assume that all residential units up to and including the third row of houses flanking the access route could be affected by a noise level increase;
- in areas of sparse development (suburban) or in rural areas, assume that any unit within 300 m of the centreline of the access route would likely be affected by a noise level increase.

It is not intended to apply these general guidelines to the comparative evaluation of sites; however, it is a reasonable and consistent basis of comparison for access route option evaluation. For detailed comparative analysis, noise measurements and forecasts were made along the identified preferred local and regional access route to each candidate site.

2.3.2 Detailed road traffic noise levels

Current and year 2000 noise levels were predicted in accordance with the MTC method (which is approved by the MOE). The method is set out in MTC publications:

- "RR197 (1978) Ontario Highway Noise Prediction Method", and
- "An Leq Traffic Noise Prediction Method (1976)".

The basic prediction model was applied:

$$Leq = 42.3 + 10.2 \log (Vc + 6\ Vt) - 13.9 \log D + 0.13S$$

where Vc = average number of cars per hour

Vt = average number of trucks per hour

D = distance (m) from edge of pavement to receiver

S = posted traffic speed limit (km/hr.)

Traffic noise levels were calculated (using the MTC model) from current and year 2000 traffic volume data provided by M.M. Dillon Limited (reference letter 9495-36-5, 6 September 1984). The additional noise contributed by OWMC site generated truck traffic was calculated on the basis of local and regional access road volumes for preferred routes provided by M.M. Dillon Limited (16 November 1984).

The Ministry of the Environment's Model Noise Control By-Law recommends limits for road traffic noise levels in outdoor residential areas (MOE Publication "NPC 131 - Guidelines for Noise Control in Land Use Planning) at Leq 55 dBA for the 07:00 to 23:00-hour period and Leq 50 dBA for the 23:00 to 07:00-hour period. Where specific municipal by-laws exist they have adopted these recommended limits. Since OWMC generated truck traffic will generally operate on access roads only during the 07:00 to 23:00-hour period the Leq 55 dBA criterion is used in assessing the extent of road traffic noise impact.

The road traffic noise level contour drawings which are part of Report W84-214-1 show the Leq 55 dBA contours for current and year 2000 traffic without OWMC truck traffic. The contour lines shown do not take into account the effects of attenuation by existing topography and buildings.

The change in the contour line location, with the added truck volumes contributed by OWMC operations, is an increase of approximately 15 m in the "worst case" situation.

Tables are included in Report W84-218-1 setting out the comparable distances (m) from the centre line of the roadways to the Leq 55 dBA (07:00 to 23:00) road traffic noise level points for each of the following traffic conditions:

° current road traffic
° year 2000 road traffic
° current plus OWMC generated truck traffic
° year 2000 plus OWMC generated truck traffic

2.4 SITE OPERATIONS NOISE LEVELS

2.4.1 General

The Ministry of the Environment Publication "NPC-105 - Stationary Sources" states:

> "For sound from a stationary source, including Quasi-Steady impulsive sound but not including other impulsive sound, if the sound level is expressed in terms of the one-hour equivalent sound level (Leq), the applicable sound level limit is the one-hour equivalent sound level (Leq) caused by road traffic for that point of reception and the same time."

For the purpose of this assessment of various modes of operation (a total of 16 operating cases) for the eight candidate sites the recommended 07:00 to 23:00 hours and 23:00 to 07:00 road traffic noise level limits of 55 dBA and 50 dBA have been used for comparison (Reference MOE Publication "NPC-131 - Guidelines for Noise Control in Land Use Planning").

On this basis 50 dBA and 55 dBA noise level contour lines have been developed for each of the eight sites for Case 1, 2, and 3 type operations (operating cases discussed in Chapter 2 of the Transportation Report).

2.4.2 Plant noise levels

The noise levels for each plant were calculated from the location shown on Monenco Limited drawings (Reference 3). Noise level calculations include the effect of truck movements within the site boundary and estimated noise from the car park.

The noise levels generated by each group of plant equipment are treated as individual point sources from the building to a point at approximately the distance from the plant equal to the width of the overall plant (greatest dimension). From this point outwards the noise levels are treated as a finite line source equal in width to the overall plant dimensions. Plant dimensions are taken as follows:

Typical Plant = 425 m x 425 m
LF-9C = 290 m x 745 m

Noise levels are calculated using the preliminary sound power level data provided for each source. The sound power levels (PWL) were converted to sound pressure levels (SPL) (treating the source as a hemisphere sound generating point) as follows:

$$SPL = 120 + 10 \log \frac{\text{antil} \left(\frac{PWL-120}{10} \right)}{\left(2 \quad d^2 \right)}$$

where d = distance (m) from source to receiver
For d = 1 m SPL = (PWL -8) dBA
where PWL is reference 10^{-12} watts
SPL is reference 10^{-5} N/m^2 (or 0.0002 microbars)

Leq noise level contours were developed for the 55, 50, and 45 dBA noise levels. For areas where road traffic makes up the night-time ambient noise the 50 dBA contour can be applied in assessing impact. However, in rural areas where night-time road traffic is not significant the 45 dBA contour should be used since ambient noise levels will probably be at approximately the Leq 45 dBA level.

If 5 dBA mitigation is generally applied to plant noise sources the noise level contours will move in so that the 55 dBA contour will become 50 dBA and the 50 dBA contour will become 45 dBA.

The noise contour results do not take into account attenuation by existing topography or buildings.

2.4.3 Landfill operations noise levels

Predicted noise level data for landfill operations were based upon the data provided in M.M. Dillon Limited Memo 9500-26 24 July 1984 from J.W. Read to S.S Wilson. The memo sets out equipments, hours of usage and equipment noise ratings at 50 ft. (15 m) for initial site development and landfill site operations.

The noise level contours for landfill operations are based on the conservative assumptions:

- cells at 50 m from site boundary,
- equipment operating at cell elevations above the berm height (therefore no berm attenuation).

Noise levels generated by the landfill equipments are treated as a finite line source along the mid-point of the cell. The cell size is 187 m x 100 m (for total solidification) therefore the line source = 187 m long and is 100 m from the site boundary.

In using the contour drawings it must be borne in mind that the noise levels occur in the following instances:

- only directly opposite the cell in use at the plant boundary,
- only when the cell height is above the berm height, and
- the noise levels will be lower than those shown when the cells are not adjacent to the site boundary and will be lower at receivers away from the cell location.

A table is included on page 3 of Report W84-214-2 giving the distances (m) from the site boundary to the 55 dBA and 50 dBA contours for each of the landfill operating conditions:

- initial site development,
- ongoing cell development,

- cell operations - fully or partially integrated sites with equipment at bottom of cell, at ground level and above berm level, and

- cell operations landfill only with equipment at bottom of cell, at ground level and above berm level.

2.5 TRAIN PASSBY NOISE LEVELS

Preliminary train noise data was set out in the letter (reference W84-214, 8 November 1984) from S.S. Wilson to M.M. Dillon Limited. It is felt that the noise data can be applied generally to any of the sites but that specific data should be developed for the preferred site(s).

Train passby noise levels are calculated from the train noise model set out in the Ministry of the Environment Publication "Acoustics Technology in Land Use Planning, Volume 1". The model is rather lengthy and somewhat complex and is not reproduced here.

The preliminary rail noise level analysis consisted of defining a rail noise corridor along either side of the rail spur line. After an analysis of the estimated rail car movements between the mainline and the candidate site, a 170 m wide corridor was identified as the rail noise impact corridor.

In defining this rail corridor no consideration was given to rail noise level change on the mainline, because the additional rail car traffic expected to be generated due to OWMC site development is relatively small. Consequently, the expected change in mainline noise level was assumed to be insignificant. However, it is recognized that this is also dependent upon the size and frequency of rail shipments to a site and the existing level of activity on the mainline.

There are limitations to the use and application of the spur line noise corridor definition. The fundamental assumption is that the rail spur line profile is approximately at gound level and that the adjoining terrain within the corridor is relatively flat. When other conditions prevail, such as an elevated rail line profile, the noise corridor would be more extensive. Conversely, if the rail line is depressed and the adjoining ground elevations are higher, the width of the affected noise corridor would be less. However, for purposes of spur line rail corridor noise impact area, the approach used is deemed to be adequate for purposes of comparing the rail options proposed to serve a candidate site.

Based upon the quantities of process additives and reagents required for delivery at an integrated site or a separate PC/I plant site, in the 10th year of site operation or receiving 300 000 t/a of special wastes, rail shipments would average 6.7 rail car loadings/day or 34 cars/week.

The preliminary rail noise analysis, conducted by S.S. Wilson & Associates, assumed an operating speed of 32 km/hr. (20 mph.) for three possible rail car shipment sizes, as follows:

- delivery of seven rail car loads/day with one locomotive;
- delivery of 17 rail car loads with one locomotive every 2.5 days; or
- delivery of 34 rail car loads once/week with two locomotives.

The duration of each train consist passby of any point along the spur line was calculated for each case. This was determined to range from 0.27 min. to 1.23 min. per passby. For each of the operating conditions, the peak noise level and eight-hour Leq dBA value was calculated for receptors located from 30 m to 1300 m away from the rail spur line. The increments of lateral distance used were 30, 60, 100, 130, 170, 200, 300, 400, 500, 600, 700, 800 and 1300 m, but varied for rail operation conditions examined.

Based upon available ambient noise level data within proximity to candidate sites it was noted that for rural areas the level would usually be from 35 to 40 dBA, and from 45 to 50 dBA in suburban areas. An average threshold value of 45 dBA Leq (eight hours) was therefore assumed as the probable limit of noise annoyance when the peak passby level is below 75 dBA.

When these values were compared to the worst case calculations (identified as 34 rail cars, two locomotives and a passby duration of 1.23 minutes), the corridor width of 170 m each side of the rail spur line was defined as the primary impact area.

This value was adapted and provided to the Institute of Environmental Research Limited for purposes of their socio-environmental evaluation.

3. NOISE LEVEL DATA

The noise level data produced by S.S. Wilson & Associates was utilized by the Institute of Environmental Research Limited to estimate the impacts due to noise.

3.1 ROAD NOISE LEVELS BASED ON TOTAL SOLIDIFICATION

The change in road noise levels on the local and regional access roads was calculated for each of the thirteen siting options arising from the eight candidate sites identified during Phase 3B of the site selection process. These are:

Case 1 - Integrated: LF-3C, LF-9C, LF-1E

Case 2 - Separate Landfill: PI-13N/LF-2N, PI-13N/LF-4N, PI-1N/LF-2N, PI-1N/LF-4N, PI-27E/LF-1E

Case 3 - Separate Incinerator: PI-13N/LF-2N, PI-13N/LF-4N, PI-1N/LF-2N, PI-1N/LF-4N, PI-27E/LF-1E

As the access road noise level analysis was conducted concurrent with all other Phase 4A site selection activities, some redundency exists in relation to both operating cases and access road links for which data were produced. However, these data are included in the Tables presented herein, as much of this information was used by other consultants for the following purposes:

- refinement of candidate site boundaries,
- comparison of local and regional access route to sites, and
- comparison of facility operating options.

Tables 1a through 1h set out the distance (m) from the centre line of the roadway to the Leq 55 dBA (07:00 to 23:00 hrs.) road traffic noise level contour. Data are provided for the following:

- current road traffic
- year 2000 road traffic
- current plus OWMC generated truck traffic
- year 2000 plus OWMC generated truck traffic

TABLE 1a: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR				
OPTION / ROUTE	Current Ambient	Yr 2000 Ambient	Scenario 2	
			Total Solidification	
			Plus Current	Plus Yr 2000
CASE I - INTEGRATED: LF-4N				
1. Fourth Line - Hwy. 401 to Main Street	60.4	216.4	68.4	222.4
- Main St. to Derry Road	9.7	31.7	22.7	41.7
- Derry Rd. to Britannia Rd.	9.7	30.7	23.7	39.7
Britannia Rd. - Fourth Line to Hwy. 25	25.7	34.7	35.7	43.7
2. Hwy. 25 - QEW to Hwy. 5	96.7	122.7	96.7	122.7
- Hwy. 5 to Britannia Rd.	81.7	103.7	81.7	103.7
3. Britannia Rd. - Hwy. 25 to First Line	12.7	16.7	25.7	28.7
- First Line to LF-4N	13.7	20.7	26.7	31.7
CASE I - INTEGRATED: LF-3C				
1. RR24 - QEW to RR81 (50 kph)	53.4	83.4	56.4	86.4
(60 kph)	64.4	102.4	67.4	105.4
- RR81 to Moyer Rd.	64.4	113.4	67.4	116.4
- Moyer Rd. to RR73	76.6	137.6	80.6	141.6
- RR73 to Ninth Avenue	91.7	149.7	96.7	153.7
- Ninth Ave. to Hwy. 20	73.7	103.7	79.7	109.7
2. Hwy. 20 - St. Catharines to RR24	50.7	63.7	52.7	65.7
3. Hwy. 20 - RR24 to RR65	50.7	63.7	59.7	70.7
RR65 - Hwy. 20 to Krick Road	21.7	33.7	32.7	48.7
Krick Rd. - RR65 to LF-3C	7.7	8.7	22.7	22.7

TABLE 1b: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR					
OPTION / ROUTE		Current Ambient	Yr 2000 Ambient	Scenario 2 Total Solidification Plus Current	Scenario 2 Total Solidification Plus Yr 2000
CASE I - INTEGRATED: LF-9C					
1. RR24	- QEW to RR81 (50 kph)	53.4	83.4	56.4	86.4
	(60 kph)	64.4	102.4	67.4	105.4
	- RR81 to Moyer Rd.	64.4	113.4	67.4	116.4
	- Moyer Rd. to RR73	76.6	137.6	80.6	141.6
	- RR73 to Ninth Avenue	91.7	149.7	96.7	153.7
	- Ninth Ave. to Hwy. 20	73.7	103.7	79.7	109.7
2. Hwy. 20	- St. Catharines to RR24	50.7	63.7	52.7	65.7
3. Hwy. 20	- RR24 to Schram Rd.	50.7	63.7	59.7	70.7
Schram Rd.	- Hwy. 20 to LF-9C	7.7	8.7	22.7	22.7
CASE I - INTEGRATED: LF-1E					
1. RR47	- QEW to RR98	62.7	68.7	70.7	76.7
2. RR47	- RR98 to Crowland Ave	11.7	29.7	23.4	37.7
3. Crowland	- RR47 to Carl Road	6.9	7.1	20.7	21.0
4. Carl Rd	- Crowland to LF - 1E	8.7	11.0	21.9	23.4

TABLE 1c: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR					
OPTION / ROUTE		Current Ambient	Yr 2000 Ambient	Scenario 2	
				Total Solidification	
				Plus Current	Plus Yr 2000
CASE II - SEPARATE LANDFILL: PI-13N/LF-2N					
1. Fourth Line	- Hwy. 401 to Main St.	60.4	216.4	73.4	223.4
	- Main St. to Derry Rd.	9.7	31.7	30.7	47.7
	- Derry Rd. to Britannia Rd.	9.7	30.7	31.7	46.7
2. Britannia Rd.	- Fourth Line to Fifth Line	25.7	34.7	42.7	50.7
Fifth Line	- Britannia Rd. to PI-13N	8.7	11.7	22.7	24.7
3. Hwy. 25	- QEW to Hwy. 5	96.7	122.7	96.7	122.7
	- Hwy. 5 to Britannia Rd.	81.7	103.7	81.7	103.7
Britannia Rd.	- Hwy. 25 to Fourth Line	25.7	34.7	26.7	34.7
4. Hwy. 10	- Hwy. 401 to Derry Rd.	182.4	222.4	188.4	229.4
Derry Rd.	- Hwy. 10 to LF-2N	119.4	198.4	123.4	204.4
CASE II - SEPARATE LANDFILL - PI-13N/LF-4N					
1. Fourth Line	- Hwy. 401 to Main St.	60.4	216.4	68.4	222.4
	- Main St. to Derry Road	9.7	31.7	22.7	41.7
	- Derry Rd. to Britannia Rd.	9.7	30.7	23.7	39.7
2. Britannia Rd.	- Fourth Line to Fifth Line	25.7	34.7	42.7	50.7
Fifth Line	- Britannia Rd. to PI-13N	8.7	11.7	22.7	24.7
3. Hwy. 25	- QEW to Hwy. 5	96.7	122.7	96.7	122.7
	- Hwy. 5 to Britannia Rd.	81.7	103.7	81.7	103.7
4. Britannia Rd.	- Hwy. 25 to Fourth Line	25.7	34.7	33.7	41.7
5. Britannia Rd.	- Hwy. 25 to First Line	12.7	16.7	22.7	25.7
	- First Line to LF-4N	13.7	20.7	22.7	28.7

TABLE 1d: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR				
OPTION / ROUTE	Current Ambient	Yr 2000 Ambient	Scenario 2	
			Total Solidification	
			Plus Current	Plus Yr 2000
CASE II - SEPARATE LANDFILL: PI-1N/LF-2N				
1. Fourth Line - Hwy. 401 to Main St.	60.4	216.4	73.4	223.4
- Main St. to Derry Rd.	9.7	31.7	30.7	47.7
- Derry Rd. to Britannia	9.7	30.7	31.7	46.7
Britannia Rd. - Fourth Line to Hwy. 25	25.7	34.7	42.7	49.7
Hwy. 25 - Britannia Rd. to PI-1N	81.7	103.7	92.7	114.7
2. Hwy. 25 - QEW to Hwy. 5	96.7	122.7	96.7	122.7
- Hwy. 5 to PI-1N	81.7	103.7	81.7	103.7
3. Hwy. 10 - Hwy. 401 to Derry Rd.	182.4	222.4	188.4	229.4
Derry Rd. - Hwy. 10 to LF-2N	119.4	198.4	123.4	204.4
CASE II - SEPARATE LANDFILL: PI-1N/LF-4N				
1. Fourth Line - Hwy. 401 to Main St.	60.4	216.4	68.4	222.4
- Main St. to Derry Rd.	9.7	31.7	22.7	41.7
- Derry Rd. to Britannia	9.7	30.7	23.7	39.7
Britannia Rd. - Fourth Line to Hwy. 25	25.7	34.7	35.7	43.7
2. Hwy. 25 - Britannia Rd. to PI-1N	81.7	103.7	92.7	114.7
3. Hwy. 25 - QEW to Hwy. 5	96.7	122.7	96.7	122.7
- Hwy. 5 to PI-1N	81.7	103.7	81.7	103.7
4. Britannia Rd. - Hwy. 25 to First Line	12.7	16.7	22.7	25.7
- First Line to LF-4N	13.7	20.7	22.7	28.7

TABLE 1e: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR				
			Scenario 2	
			Total Solidification	
OPTION / ROUTE	Current Ambient	Yr 2000 Ambient	Plus Current	Plus Yr 2000
CASE II - SEPARATE LANDFILL: PI-27E/LF-1E				
1. RR47 - QEW to RR98	62.7	68.7	70.7	76.7
2. RR47 - RR98 to PI-27E	11.7	29.7	32.7	45.7
3. RR47 - PI-27E to Crowland Ave	11.7	29.7	20.7	34.5
4. Crowland - RR47 to Carl Road	6.9	7.1	16.7	18.1
5. Carl Road - Crowland to LF - 1E	8.7	11.0	19.0	19.6

TABLE 1f: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR				
			Scenario 2	
			Total Solidification	
OPTION / ROUTE	Current Ambient	Yr 2000 Ambient	Plus Current	Plus Yr 2000
CASE III - SEPARATE INCINERATOR: PI-13N/LF-2N				
1. Fourth Line - Hwy. 401 to Main St.	60.4	216.4	63.4	218.4
- Main St. to Derry Rd.	9.7	31.7	14.7	34.7
- Derry Rd. to Britannia Rd.	9.7	30.7	15.7	33.7
2. Britannia Rd. - Fourth Line to Fifth Line	25.7	34.7	29.7	37.7
Fifth Line - Britannia Rd. to PI-13N	8.7	11.7	12.7	14.7
3. Hwy. 25 - QEW to Hwy. 5	96.7	122.7	96.7	122.7
- Hwy. 5 to Britannia Rd.	81.7	103.7	81.7	103.7
Britannia Rd. - Hwy. 25 to Fourth Line	25.7	34.7	25.7	34.7
4. Hwy. 10 - Hwy. 401 to LF-2N	182.4	222.4	183.4	223.4
5. Derry Rd. - Hwy. 410 to Hwy. 10	119.4	198.4	124.4	202.4
CASE III - SEPARATE INCINERATOR: PI-13N/LF-4N				
1. Fourth Line - Hwy. 401 to Main St.	60.4	216.4	68.4	222.4
- Main St. to Derry Road	9.7	31.7	22.7	41.7
- Derry Rd. to Britannia Rd.	9.7	30.7	23.7	39.7
2. Britannia Rd. - Fourth Line to Fifth Line	25.7	34.7	29.7	37.7
Fifth Line - Britannia Rd. to PI-13N	8.7	11.7	12.7	14.7
3. Hwy. 25 - QEW to Hwy. 5	96.7	122.7	96.7	122.7
- Hwy. 5 to Britannia Rd.	81.7	103.7	81.7	103.7
4. Britannia Rd. - Hwy. 25 to Fourth Line	25.7	34.7	36.7	43.7
5. Britannia Rd. - Hwy. 25 to First Line	12.7	16.7	25.7	28.7
- First Line to LF-4N	13.7	20.7	26.7	31.7

TABLE 1g: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR					
OPTION / ROUTE		Current Ambient	Yr 2000 Ambient	Scenario 2	
				Total Solidification	
				Plus Current	Plus Yr 2000
CASE III - SEPARATE INCINERATOR: PI-1N/LF-2N					
1. Fourth Line	- Hwy. 401 to Main St.	60.4	216.4	63.4	218.4
	- Main St. to Derry Rd.	9.7	31.7	14.7	34.7
	- Derry Rd. to Britannia Rd.	9.7	30.7	15.7	33.7
Britannia Rd.	- Fourth Line to Hwy. 25	25.7	34.7	29.7	37.7
Hwy. 25	- Britannia Rd. to PI-1N	81.7	103.7	84.7	105.7
2. Hwy. 25	- QEW to Hwy. 5	96.7	122.7	96.7	122.7
	- Hwy. 5 to PI-1N	81.7	103.7	81.7	103.7
3. Hwy. 10	- Hwy. 401 to LF-2N	182.4	222.4	183.4	223.4
4. Derry Rd.	- Hwy. 410 to LF-2N	119.4	198.4	124.4	202.4
CASE III - SEPARATE INCINERATOR: PI-1N/LF-4N					
1. Fourth Line	- Hwy. 401 to Main St.	60.4	216.4	68.4	222.4
	- Main St. to Derry Rd.	9.7	31.7	22.7	41.7
	- Derry Rd. to Britannia Rd.	9.7	30.7	23.7	39.7
2. Hwy. 25	- Britannia Rd. to PI-1N	81.7	103.7	84.7	105.7
3. Hwy. 25	- QEW to Hwy. 5	96.7	122.7	96.7	122.7
	- Hwy. 5 to PI-1N	81.7	103.7	81.7	103.7
4. Britannia Rd.	- Hwy. 25 to First Line	12.7	16.7	25.7	28.7
	- First Line to LF-4N	13.7	20.7	26.7	31.7

TABLE 1h: Ambient and Forecasted Road Noise Levels

DISTANCE (m) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR					
OPTION / ROUTE		Current Ambient	Yr 2000 Ambient	Scenario 2 Total Solidification Plus Current	Scenario 2 Total Solidification Plus Yr 2000
CASE III - SEPARATE INCINERATOR: PI-27E/LF-1E					
1. RR47	- QEW to RR98	62.7	68.7	70.7	76.7
2. RR47	- RR98 to PI-27E	11.7	29.7	32.7	45.7
3. RR98	- RR47 to Young Road	55.7	72.7	61.7	77.7
Young Rd.	- RR98 to LF-1E	3.7	4.7	16.7	16.7

Current road traffic volumes are based upon volume count data extracted from roadway appraisal sheets provided by the various road agencies (see report Chapter 2). Year 2000 road traffic volume estimates were provided by M.M Dillon Limited - Transportation and are based upon the road agencies forecasted annual growth rate on each road link, extrapolated to the year 2000. The OWMC generated truck traffic volumes to candidate sites was also provided by M.M Dillon Limited - Transportation consultant and are as recorded in Appendices F and G for the various site operating cases.

3.2 ROAD NOISE LEVELS BASED ON PARTIAL SOLIDIFICATION

The application of the partial solidification option was considered in sensitivity analyses. Consequently, this analysis was undertaken and applied during a later stage of Phase 4A of preferred site(s) selection and only considered a limited number of siting options. Noise data presented in Tables 2a through 2c include identical outputs to those presented in the Table 1 series, except that only six siting combinations are included:

Case 1 - Integrated: LF-3C, LF-9C, LF-1E

Case 2 - Separate Landfill: PI-1N/LF-4N, PI-13N/LF-4N, PI-27E/LF-1E

The noise level forecasts as recorded in the Tables are somewhat lower than those recorded for total solidification as the trucking requirements for partial solidification is less intensive.

TABLE 2a: AMBIENT AND FORECASTED ROAD NOISE LEVELS

DISTANCE (M) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR

(PARTIAL SOLIDIFICATION)

OPTION/ ROUTE	CURRENT	CURRENT + OWMC	YEAR 2000	YEAR 2000 + OWMC
Case 1 : LF-3C				
RR24 - QEW to RR81	64.4	67.4	102.4	105.4
- RR81 to Moyer	64.4	66.4	113.4	116.4
- Moyer to RR73	76.6	78.6	137.6	140.6
- RR73 to Ninth Ave	91.7	96.7	149.7	153.7
- Ninth Ave to Hwy 20	73.7	77.7	103.7	106.7
Hwy 20 - St. Catherines to RR24	50.7	53.7	63.7	65.7
- RR24 to RR65	50.7	57.7	63.7	70.7
RR65 - Hwy 20 to Krick Road	21.7	31.7	33.7	40.7
Krick Rd - RR65 to LF-3C	7.7	20.7	8.7	21.7
Case 1 : LF-9C				
RR24 - QEW to RR81	64.4	67.4	102.4	105.4
- RR81 to Moyer	64.4	66.4	113.4	116.4
- Moyer to RR73	76.6	78.6	137.6	140.6
- RR73 to Ninth Ave	91.7	96.7	149.7	153.7
- Ninth Ave to Hwy 20	73.7	77.7	103.7	106.7
Hwy 20 - St. Catherines to RR 24	50.7	53.7	63.7	65.7
- RR24 to Schram Rd	50.7	57.7	63.7	70.7
Schram Rd - Hwy 20 to LF-9C	7.7	20.7	8.7	21.7
Case 1 : LF-1E				
Biggar Rd - QEW to RR98	62.7	69.7	68.7	74.7
- RR98 to Crowland Ave	11.7	23.7	29.7	38.7
Crowland Ave - Biggar Rd to Carl Rd	5.7	19.7	6.7	19.7
Carl Rd - Crowland Ave to LF-1E	8.7	21.7	10.7	22.7

TABLE 2b: AMBIENT AND FORECASTED ROAD NOISE LEVELS

DISTANCE (M) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR

(PARTIAL SOLIDIFICATION)

OPTION/ ROUTE	CURRENT	CURRENT + OWMC	YEAR 2000	YEAR 2000 + OWMC
Case 2 : PI-1N/LF-4N				
Fourth Line - Hwy 401 to Main Street	60.4	66.4	216.4	222.4
- Main Street to Derry Rd	9.7	21.7	31.7	39.7
- Derry to Britannia Rd	9.7	21.7	30.7	38.7
Britannia - Fourth to Hwy 25	25.7	33.7	34.7	42.7
- First Line to LF-4N	13.7	17.7	20.7	23.7
Hwy 25 - Britannia to PI-1N	81.7	86.7	103.7	110.7
- QEW to Hwy 5	96.7	96.8	122.7	122.8
- Hwy 5 to PI-1N	81.7	81.8	103.7	103.8
First Line - PI-1N to Britannia Rd	15.7	18.7	19.7	23.7
Case 2 : PI-13N/LF-4N				
Fourth Line - Hwy 401 to Main Street	60.4	66.4	216.4	222.4
- Main to Derry Rd	9.7	21.7	31.7	39.7
- Derry to Britannia Rd	9.7	21.7	30.7	38.7
Fifth Line - PI-13N to Britannia RD	8.7	18.7	11.7	20.7
Britannia Rd - Fourth to Fifth Line	25.7	36.7	34.7	44.7
- Fourth to Hwy 25	25.7	29.7	34.7	37.7
- Hwy 25 to First Line	12.7	16.7	16.7	19.7
- First Line to LF-4N	13.7	17.7	20.7	23.7
Hwy 25 - QEW to Hwy 5	96.7	96.8	122.7	122.8
- Hwy 5 to Britannia Rd	81.7	81.8	103.7	103.8

TABLE 2c: AMBIENT AND FORECASTED ROAD NOISE LEVELS

DISTANCE (M) FROM CENTRE LINE OF ROAD TO 55 dBA CONTOUR

(PARTIAL SOLIDIFICATION)

OPTION/ ROUTE		CURRENT	CURRENT + OWMC	YEAR 2000	YEAR 2000 + OWMC
Case 2 : PI-27E/LF-1E					
Biggar Rd (RR47)	- QEW to RR98	62.7	69.7	68.7	74.7
	- RR98 to PI-27E	11.7	23.7	29.7	38.7
	- PI-27E to Crowland Ave	11.7	15.7	29.7	32.7
Crowland Ave - Biggar Rd to Carl Rd		5.7	11.7	6.7	11.8
Carl Rd - Crowland to LF-1E		8.7	13.7	10.7	15.7

3.3 SITE OPERATIONS NOISE DATA

Site operations noise level data were calculated for both daytime (plant and landfilling) and nighttime (plant operation only). This was recorded on 1:10 000 OWMC base maps and included the following information:

- candidate site boundary refinement,
- location of the operating plant,
- location of the 55 dBA contour based on daytime activities within the site, and
- location of the 50 dBA contour level based on nighttime activities within the site.

As these data were recorded on reproducible base plans for use by Institute of Environmental Research to determine site noise impact, they are not included within this Appendix. A description of the site noise impact methodology is presented in the report prepared by the Institute of Environmental Research Inc. (IER) 1985 Site Selection Process - Phase 4A: Selection of a Preferred Site(s) - Social Analysis, and the M.M. Dillon Limited report 1985 Site Selection Process - Phase 4A: Selection of a Preffered Site(s) - Site Selection.

4. NOISE DATA LIMITATIONS

The discussion under section 2 provides basic information on the assumptions applied and the resulting limitations. At this stage in the OWMC site selection process these limitations were acceptable in view of the large number of candidate sites and operating combinations that were evaluated. The methodology developed was consistently applied for all siting combinations and analysis areas to assess noise effects. Consequently, the results are considered adequate for noise impact assessment in comparing sites.

Monenco are reviewing the noise levels associated with the landfill, and the results will be documented in their Phase 4A Engineering report (Reference 3). This information will update the basis used by S.S. Wilson & Associates in their noise analyses (see S.S. Wilson report W84-214-2).

The noise calculation outputs as produced during Phase 4A should not be interpreted as absolute values. Limitations identified in the methodology preclude such use. Having recognized these limitations, further refined analyses will be required during Phase 4B to produce more precise results at the preferred site(s) location. Thus, it is intended to refine the level of detail of the future analysis of noise levels and to determine viable methods for noise attenuation to minimize the noise effects and resulting impacts.

REFERENCES

1. Ontario Ministry of the Environment Publications

NPC-101 Technical Definitions
NPC-102 Instrumentation
NPC-103 Measurement Procedures
NPC-104 Sound Level Adjustments
NPC-105 Stationary Sources
NPC-131 Guidelines for Noise Control in Land Use Planning

Acoustics Technology in Land Use Planning Volume 1
Model Municipal Noise Control By-Law (1978)

2. Ontario Ministry of Transportation and Communications Publications

- RR197 (1978) Ontario Highway Noise Prediction Method
- An Leq Traffic Noise Prediction Method (1976)

3. Monenco Limited. Site Selection Process. Phase 4A: Selection of a Preferred Site(s) - Engineering (1985)

APPENDIX M

DEVELOPMENT OF TRANSPORTATION DATA FOR PARTIAL SOLIDIFICATION

1. INTRODUCTION

During Phase 4A of the OWMC Facilities Development Process the total solidification treatment process was used for the purposes of site selection. This process requires that all waste residues and effluents be solidified. However, a partial solidification treatment process was also developed (reference 1), but was evaluated only as part of a sensitivity analysis to discern the potential for reducing the transportation-related risk due to accidents and spills, and the transportation costs associated with the more vehicle intensive total solidification treatment process. Partial solidification produces reduced volumes of solidified residues arriving at the landfill when compared with total solidification, but an aqueous effluent is produced which would require disposal (reference 2).

A number of effluent disposal options were considered many of which did not require truck transport, therefore, only the special waste, additive and reagent and inter-site transfer movements were considered. If the preferred effluent disposal option utilizes truck transport the appropriate costs and risk data must be included.

The only significant difference between the partial and total solidification treatment process from a transportation viewpoint is a reduction in process additive quantities (cement and sodium silicate), with a resulting decrease in the quantity of solidified waste and leachate. This reduction in process materials and inter-site transfer quantities reduces the number of truck movements and thus reduces the transport related risk and cost. Except for those materials aforementioned, all special wastes, process reagents and other inter-site transfer quantities (ash, slag) remain unchanged between partial and total solidification, as do the shipping locations, truck types, load sizes, and costing basis for each material handled.

This appendix presents the process quantities, vehicle movements, transport costs, annual two-way truck accident involvements and the vehicle kilometres resulting from the transportation of special waste, additives and reagents and inter-site transfers using the partial solidification treatment process. The development of transportation data was based on the six facility siting options remaining after the partially integrated site comparision (see Chapter 7). This comparison concluded that the preferred site of the physical/chemical treatment plant, in partially integrated siting options, was the PI site identified in Case 2 siting options. This resulted in the elimination of the Case 3 siting options for PI-13N/LF-4N, PI-1N/LF-4N and PI-27E/LF-1E which located the physical/chemical treatment plant on the LF site.

2. TRANSPORT COSTS

The transport analysis and comparison of the six facility operating options includes the separate costing for movement of special wastes, additives and reagents, and inter-site transfers. In support of these costs the quantities and vehicle requirements of the process additives and reagents and inter-site transfers for partial solidification are presented herein with the costing rules adopted for use during Phase 4A. The results of these analyses are presented and compared with total solidification for each facility operating option.

2.1 SPECIAL WASTE

The make up and distribution of the 300 000 t/a waste scenarios by source location, that would be treated at an OWMC treatment plant operating at design capacity, remains unchanged under partial solidification. Only the method of treating the waste is changed by reducing the quantity of additives necessary for treatment. Appendix F, Special Waste Scenarios, describes in detail the development of the special waste scenarios and their conversion to vehicle movements. Appendix G, Transport Costs, provides additional information on the costing methodology assumptions and application which are common to both total and partial solidification.

2.2 ADDITIVES AND REAGENTS

The quantities of additives and reagents for partial solidification are the same for each facility operating case and site option because the quantities of special wastes modelled remains constant. Table 1 presents a list of the chemicals, their form, assumed shipping location, and quantities. There is a noticable reduction in the additive quantities of cement from 52 700 t/a to 17 600 t/a and sodium silicate from 21 700 t/a to 7300 t/a.

OWMC PHASE 4A - TRANSPORTATION

TABLE 1

ADDITIVE AND REAGENT SOURCE LOCATIONS AND ANNUAL QUANTITIES

Additive or Reagent	Physical State	Annual Quantity For Partial Solidification	Shipping Location
For Physical Chemical and Solidification			
Cement	Powder	17600t	Mississauga
Sodium Silicate	Liquid	7300t	Etobicoke
Sulphar Dioxide	Liquid	100t	Cornwall
Chlorine[1]	Liquid	400t	Cornwall
Caustic Soda	50% Liquid	640t	Cornwall
Hydrated Lime	Solid	7400t	Toronto
Activated Carbon	Solid	100t	Hamilton
Nitrogen	Liquid	8000 Nm^3	Scarborough
For Incinerator Plant			
Caustic Soda	50% Liquid	5 600t	Cornwall
Calcium Oxide	Solid	2380t	Ingersoll
Nitrogen	Liquid	16000 Nm^3	Scarborough

Source: Monenco Limited. 1985. Site Selection Process, Phase 4A: Selection of Preferred Site(s) - Engineering.

1. An alternative chemical compound (sodium hypochlorite) to liquified chlorine is being considered by the engineering consultant.

Further information developed and assumed for the calculation of additive and reagent costs are provided in Table 2. This table details the truck types, load sizes, costing formulae and one way vehicle movements for additives and reagents. These costing formulae, as developed by Pilorusso Research Associates for the individual truck types includes a total loading and unloading time estimate of two hours (Reference 3).

2.3 INTER-SITE TRANSFERS

Inter-site transfer movements are only relevant for the three, Case 2, partially integrated site options. The transfer quantities were extracted from a Monenco Limited report (reference 4) and the data are presented along with other relevant information to facilitate the calculation of the annual two-way site transfer costs for each option tested.

The integrated sites of LF-3C, LF-9C and LF-1E do not require inter-site transfers because of the treatment facilities are located on the same site. Consequently, there will not be any transfer costs associated with these site options for the purposes of site selection.

Under a Case 2 facility operating option the physical/chemical treatment plant, incinerator and solidification plant are located at the PI site with a separate landfill at the LF site. Therefore, the site combinations of PI-13N/LF-4N, PI-1N/LF-4N and PI-27E/LF-1E require inter-site transfers to move the treated solidified waste and slag from the PI site to the landfill, and the leachate from the landfill to the PI site.

OWMC PHASE 4A - TRANSPORTATION

TABLE 2

LOAD SIZE, TRUCK TYPE, ONE-WAY VEHICLE MOVEMENTS AND COST BASIS FOR THE TRANSPORTATION OF PARTIAL SOLIDIFICATION PROCESS ADDITIVES AND REAGENTS

Material	Load Size[1]	Truck Type[2]	Vehicle movements and Cost Basis[3]
Cement	37 t	6 axle semi	476 (a)
Sodium Silicate	31 t	6 axle semi	236 (a)
Sulphur Dioxide	19 t	3 axle tanker	6 (b)
Chlorine	19 t	3 axle tanker	22 (b)
Caustic Soda	31 t	6 axle semi	202 (a)
Hydrated Lime	36 t	6 axle semi	206 (a)
Activated Carbon	20 t	5 axle semi van	5 (c)
Nitrogen	18500 Nm^3	3 axle tanker	2 (b)
Calcium Oxide	36 t	6 axle semi	67 (a)
Total			1,222

NOTES:

1. Derived from Monenco Limited. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

2. Pilorusso Research Associates Inc., letter to M.M. Dillon dated 15 October 1984.

3. Cost Formulae[2]

(a) Transport Cost = $98 + $1.40/round trip km gate-to-gate.
(b) Transport Cost = $80 + $1.16/round trip km gate-to-gate.
(c) Transport Cost = $46 + $1.30/round trip km gate-to-gate.

Table 3 presents the transfer quantities, truck movements, costing basis and the annual two-way costs associated with each of the three facility operating option. Since transfers are costed on an hourly basis, each truck movement includes a total estimated load and unload time of 60 minutes, plus the round trip gate-to-gate time.

2.4 RESULTS

The results of the analysis of the annual return gate-to-gate plus terminal time transport cost for the six facility operating options are presented in Table 4. Separate costs are tabulated for the movement of special waste, inter-site transfers between the two site components of the partially integrated siting options and additives and reagents. Table 5 presents a summary of the annual one-way vehicle movement calculations used as an input to the cost calculation. These calculations are based upon the receipt of 300 000 tonnes per annum of special waste and the required process additive and reagent quantities for partial solidification.

3. ACCIDENT INVOLVEMENT AND SPILL FREQUENCY

The annual two-way truck accident involvements for the six facility operating options analyzed under partial solidification are tabulated in Table 6. Separate calculations were made for the province-wide access road systems and the local and regional access road systems to reflect the different study areas evaluated during Phase 4A. Initially, for each access road system component, the expected annual accident frequencies were calculated for special wastes, additives and reagents and inter-site transfers, based upon the year during which an OWMC

OWMC PHASE 4A - TRANSPORTATION

TABLE 3: TRANSPORT COST COMPARISON - (INTER-SITE TRANSFERS)

300 kt SCENARIO | CASE II - SEPARATE LANDFILL | PARTIAL SOLIDIFICATION

OPTION	WASTE TYPE	WASTE QUANTITY (t/a)	# OF TRUCKS	TERMINAL TIME (min)(1)	TIME FOR TRANSFER (min)	COST BASIS ($/min)	COST PER WASTE TYPE ($)	TOTAL COST ($)
PI-13N/LF-4N								
	Solidifying Waste (PI > LF)	170900	5700	60	16	1.333333	$577,600	$691,499
	Slag (PI > LF)	7600	254	60	16	1.333333	$25,739	
	Leachate (LF > PI)	26100	870	60	16	1.333333	$88,160	
PI-1N/LF-4N								
	Solidifying Waste (PI > LF)	170900	5700	60	6	1.333333	$501,600	$600,512
	Slag (PI > LF)	7600	254	60	6	1.333333	$22,352	
	Leachate (LF > PI)	26100	870	60	6	1.333333	$76,560	
PI-27E/LF-1E								
	Solidifying Waste (PI > LF)	170900	5700	60	6	1.333333	$501,600	$600,512
	Slag (PI > LF)	7600	254	60	6	1.333333	$22,352	
	Leachate (LF > PI)	26100	870	60	6	1.333333	$76,560	

(1) Solidified waste and slag are moved in a 30t, 5 axle, semi-dump truck at a cost of $80/hour.
Leachate is moved in a 30t, 5 axle, tanker truck at a cost of $80/hour.

(2) 60 Minutes (total load and unload time) are added to in-transit time from gate-to-gate.

OWMC PHASE 4A - TRANSPORTATION

TABLE 4

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COSTS FOR PARTIAL SOLIDIFICATION

Siting Option and Operating Case	Annual Transport Costs[1] Partial Solidification
Case 1 Integrated	
LF-3C	
Special Waste Transport	$4,472,000
Inter-Site Transfers	-
Additives & Reagent Transport	798,000
TOTAL TRANSPORT COST	5,270,000
LF-9C	
Special Waste Transport	4,073,000
Inter-Site Transfers	-
Additives & Reagent Transport	757,000
TOTAL TRANSPORT COST	4,830,000
LF-1E	
Special Waste Transport	4,530,000
Inter-Site Transfers	-
Additives & Reagent Transport	825,000
TOTAL TRANSPORT COST	5,355,000

OWMC PHASE 4A - TRANSPORTATION

TABLE 4

ANNUAL RETURN GATE-TO-GATE PLUS TERMINAL TIME TRANSPORT COSTS FOR PARTIAL SOLIDIFICATION

(Continued)

Siting Option and Operating Case	Annual Transport Costs[1] Partial Solidification
Case 2 Separate Landfill	
PI-13N/LF-4N	
Special Waste Transport	3,864,000
Inter-Site Transfers	691,000
Additives & Reagent Transport	489,000
TOTAL TRANSPORT COST	5,044,000
PI-1N/LF-4N	
Special Waste Transport	3,891,000
Inter-Site Transfers	601,000
Additives & Reagent Transport	496,000
TOTAL TRANSPORT COST	4,988,000
PI-27E/LF-1E	
Special Waste Transport	4,366,000
Inter-Site Transfers	601,000
Additives & Reagent Transport	812,000
TOTAL TRANSPORT COST	5,779,000

NOTE:

1. Annual transport costs are based upon the receipt of 300 000 t/a of special waste and includes the process reagents and additives for partial solidification.

OWMC PHASE 4A - TRANSPORTATION
TABLE 5
ANNUAL ONE-WAY TRANSPORT VEHICLE MOVEMENTS FOR PARTIAL SOLIDIFICATION

Siting Option and Operating Case	Annual Vehicle Movements[1] Partial Solidification
Case 1 Integrated	
LF-3C	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	1,222
TOTAL	20,774
LF-9C	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	1,222
TOTAL	20,774
LF-1E	
Special Waste Transport	19,552
Inter-Site Transfers	-
Additives & Reagent Transport	1,222
TOTAL	20,774

OWMC PHASE 4A - TRANSPORTATION
TABLE 5
ANNUAL ONE-WAY TRANSPORT VEHICLE MOVEMENTS FOR PARTIAL SOLIDIFICATION

(Continued)

Siting Option and Operating Case	Annual Vehicle Movements[1] Partial Solidification
Case 2 Separate Landfill	
PI-13N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	6,824
Additives & Reagent Transport	1,222
TOTAL	27,592
PI-1N/LF-4N	
Special Waste Transport	19,546
Inter-Site Transfers	6,824
Additives & Reagent Transport	1,222
TOTAL	27,592
PI-27E/LF-1E	
Special Waste Transport	19,552
Inter-Site Transfers	6,824
Additives & Reagent Transport	1,222
TOTAL	27,592

NOTE:

1. Annual vehicle movements are based upon the receipt of 300 000 t/a of special waste and includes the process reagents and additives for partial solidification.

treatment facility would be processing 300 000 tonnes of special waste. Appendix K describes the methodology in more detail.

The environmental model developed during Phase 4A and described in Appendix K, produces the expected annual accident frequency for each component and each site option based upon the road link-based historical all vehicle accident rates (accidents per MV km). To provide estimates of the OWMC annual two-way truck accident involvements, it was necessary to apply an adjustment factor which reflects both the number of vehicles involved in accidents and the differences between the all-vehicle and heavy truck involvement frequencies. This adjustment factor was developed through a special analysis undertaken and reported in Appendix J. The resulting factor was applied to the environmental model annual accident frequency outputs to produce annual two-way truck accident involvements.

The two-way annual truck accident involvement was further used as an input to calculate "accident related spills". "Non-accident related spills" are based on one spill per million vehicle kilometres of travel as produced by the transportation model. These two components summed together produce the "total spills" and this was calculated for the province-wide and local and regional access road systems. The annual one-way vehicle kilometres are presented in Table 7, Table 8 includes the total annual number of spills, disaggregated by special waste, additives and reagents and inter-site transfers, to each candidate receiver site option.

Since the make-up of the 300 000 t/a waste scenarios, estimated by source location, remains unchanged under partial solidification the truck movements from special waste source points throughout Ontario to each siting option remain unchanged. As a result the annual two-way truck accident involvements and vehicle kilometres for special waste to each siting option are the same as that for total solidification.

OWMC PHASE 4A - TRANSPORTATION
TABLE 6
TWO-WAY ANNUAL ACCIDENT INVOLVEMENT ALONG THE TOTAL ACCESS ROAD SYSTEM FOR PARTIAL SOLIDIFICATION

	Two-Way Annual Accident Involvement[1]		
Siting Option and Operating Case	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	3.380	3.170	6.550
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.263	0.682	0.945
TOTAL	3.643	3.852	7.495
LF-9C			
Special Waste Transport	2.344	3.171	5.515
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.199	0.681	0.880
TOTAL	2.543	3.852	6.395
LF-1E			
Special Waste Transport	0.528	5.390	5.918
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.033	0.842	0.875
TOTAL	0.561	6.232	6.793

OWMC PHASE 4A - TRANSPORTATION

TABLE 6

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT ALONG THE TOTAL ACCESS ROAD SYSTEM FOR PARTIAL SOLIDIFICATION

(Continued)

Siting Option and Operating Case	Two-Way Annual Accident Involvement[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	1.109	1.964	3.073
Inter-Site Transfers	1.098	0.000	1.098
Additives & Reagent Transport	0.068	0.355	0.423
TOTAL	2.275	2.319	4.594
PI-1N/LF-4N			
Special Waste Transport	1.411	1.962	3.373
Inter-Site Transfers	0.594	0.000	0.594
Additives & Reagent Transport	0.090	0.355	0.445
TOTAL	2.095	2.317	4.412
PI-27E/LF-1E			
Special Waste Transport	0.172	5.388	5.560
Inter-Site Transfers	0.124	0.000	0.124
Additives & Reagent Transport	0.011	0.841	0.852
TOTAL	0.307	6.229	6.536

NOTE:

1. Annual accident involvement is based upon receipt of 300 000 t/a of special waste and includes the process reagents and additives for partial solidification.

OWMC PHASE 4A - TRANSPORTATION

TABLE 7

ONE-WAY ANNUAL VEHICLE KILOMETRES ALONG THE TOTAL ACCESS ROAD SYSTEM FOR PARTIAL SOLIDIFICATION

Siting Option and Operating Case	One-Way Annual Vehicle Kilometres[1] Local & Regional Access Road	Province-Wide Access Road	Total Road Access System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	521,142	1,003,290	1,524,432
Inter-Site Transfers	0	0	0
Additives & Reagent Transport	39,104	247,247	286,351
TOTAL	560,246	1,250,537	1,810,783
LF-9C			
Special Waste Transport	315,846	1,003,290	1,319,136
Inter-Site Transfers	0	0	0
Additives & Reagent Transport	26,273	247,247	273,520
TOTAL	342,119	1,250,537	1,592,656
LF-1E			
Special Waste Transport	76,253	1,507,140	1,583,393
Inter-Site Transfers	0	0	0
Additives & Reagent Transport	4,766	291,239	296,005
TOTAL	81,019	1,798,379	1,879,398

OWMC PHASE 4A - TRANSPORTATION
TABLE 7
ONE-WAY ANNUAL VEHICLE KILOMETRES ALONG THE TOTAL ACCESS ROAD SYSTEM FOR PARTIAL SOLIDIFICATION

(Continued)

Siting Option and Operating Case	One-Way Annual Vehicle Kilometres[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	163,005	1,025,280	1,188,285
Inter-Site Transfers	58,686	0	58,686
Additives & Reagent Transport	9,697	165,810	175,507
TOTAL	231,388	1,191,090	1,422,478
PI-1N/LF-4N			
Special Waste Transport	184,731	1,025,280	1,210,011
Inter-Site Transfers	21,837	0	21,837
Additives & Reagent Transport	11,492	165,810	177,302
TOTAL	218,060	1,191,090	1,409,150
PI-27E/LF-1E			
Special Waste Transport	23,462	1,507,140	1,530,602
Inter-Site Transfers	18,425	0	18,425
Additives & Reagent Transport	1,466	291,239	292,705
TOTAL	43,353	1,798,379	1,841,732

NOTE:

1. Annual vehicle kilometres are based upon receipt of 300 000 t/a of special waste and includes the process reagents and additives for partial solidification.

OWMC PHASE 4A - TRANSPORTATION

TABLE 8: ANNUAL NUMBER OF SPILLS FOR THE TOTAL ACCESS ROAD SYSTEM - PARTIAL SOLIDIFICATION

Site/Site Combination and Operating Case	Local & Regional Access Roads			Province Wide Access Roads			Total Access Road System		
	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total
CASE 1 INTEGRATED									
LF-3C									
Special Waste Transport	0.521	0.331	0.852	1.003	0.311	1.314	1.524	0.642	2.166
Additive & Reagent Transport	0.039	0.026	0.065	0.247	0.067	0.314	0.286	0.093	0.379
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.560	0.357	0.917	1.250	0.378	1.628	1.811	0.734	2.545
LF-9C									
Special Waste Transport	0.316	0.230	0.546	1.003	0.311	1.314	1.319	0.540	1.860
Additive & Reagent Transport	0.026	0.019	0.046	0.247	0.067	0.314	0.274	0.086	0.360
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.342	0.249	0.591	1.250	0.378	1.628	1.593	0.627	2.219
LF-1E									
Special Waste Transport	0.076	0.052	0.128	1.507	0.528	2.035	1.583	0.580	2.163
Additive & Reagent Transport	0.005	0.003	0.008	0.291	0.082	0.373	0.296	0.086	0.382
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.081	0.055	0.136	1.798	0.610	2.408	1.879	0.666	2.545
CASE 2 SEPARATE LANDFILL									
PI-13N/LF-4N									
Special Waste Transport	0.163	0.109	0.272	1.025	0.192	1.217	1.188	0.301	1.489
Additive & Reagent Transport	0.010	0.007	0.016	0.166	0.034	0.200	0.176	0.041	0.217
Inter-Site Transfers	0.059	0.108	0.166	0.000	0.000	0.000	0.059	0.108	0.166
TOTAL	0.231	0.223	0.454	1.191	0.226	1.417	1.422	0.450	1.873
PI-1N/LF-4N									
Special Waste Transport	0.185	0.138	0.323	1.025	0.192	1.217	1.210	0.331	1.541
Additive & Reagent Transport	0.011	0.009	0.020	0.166	0.034	0.200	0.177	0.044	0.221
Inter-Site Transfers	0.022	0.058	0.080	0.000	0.000	0.000	0.022	0.058	0.080
TOTAL	0.218	0.205	0.423	1.191	0.226	1.417	1.409	0.432	1.841
PI-27E/LF-1E									
Special Waste Transport	0.023	0.017	0.040	1.507	0.528	2.035	1.531	0.545	2.075
Additive & Reagent Transport	0.001	0.001	0.003	0.291	0.082	0.373	0.293	0.084	0.376
Inter-Site Transfers	0.018	0.012	0.031	0.000	0.000	0.000	0.018	0.012	0.031
TOTAL	0.043	0.030	0.073	1.798	0.610	2.408	1.842	0.641	2.482

Notes: 1. Based on one spill per million vehicle kilometers.
2. Derived using a conditional probability of 0.196 applied to the one-way OWMC annual accident involvement.

The differences between the partial and total solidification treatment processes are evident in the reduced quantities (and thus truck movements) of additives and resulting decreases in inter-site transfers. The decrease in transportation accident frequency evident under partial solidification can be attributed entirely to these reductions. The results of the analysis reported herein are discussed further and applied in report Chapter 8.

REFERENCES

1. Ontario Waste Management Corporation. 1984. Facilities Development Process - Phase 3 Report.

2. Monenco Ltd. 1985. Status Report, Facility Design.

3. Monenco Ltd. 1985. Site Selection Process. Phase 4A: Selection of Preferred Site(s) - Engineering.

4. Pilorusso Research Associates, Inc., letter to M.M. Dillon dated 15 October 1984.

APPENDIX N

DATA FOR SENSITIVITY ANALYSIS USING TOTAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Local and Regional Access Road Spill Risk Indices For Facility Site Options Used During Detailed Comparative Analysis

- Road User Risk Indices - Tables 1-6 (pp. N-3 to N-13)
  - Accident Involvement Risk Index
  - Total Spill Risk Index
- Residents (Population) Risk Index - Tables 7-12 (pp. N-15 to N-25)
- Sensitive Community & Recreational Features Risk Index - Tables 13-18 (N-27 to N-37)
- Surface Water Spill Pathway Risk Index - Tables 19-24 (pp. N-39 to N-48)
- Sensitive Hydrogeologic Lands Risk Index - Tables 25-30 (N-49 to N-58)

Two-Way Annual Accident Involvement for the Total Access Road System - Table 31 (pp. N-59 to N-60)

Annual Number of Spills for the Total Access Road System - Table 32 (p. N-61)

Factor and Indicator Values for Each Siting Option - Table 33 (p. N-62)

Scaled Factor and Indicator Values for Each Siting Option - Table 34 (p. N-63)

Aggregation of Transportation Risk Factors - Table 35 (p. N-64)

Ranking of Sites - Table 36 (p. N-65)

LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	35	0.001	.000	.000	.000		4.665	1.201	5.867
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168		2610.924	6710.721	9321.645
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	4010	1966.988	5063.789	7030.776
				Additives & Reagents	35	0.001	.000	.000	.000		3.521	0.906	4.428
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127		1970.509	5064.695	7035.204
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	35	0.001	.000	.000	.000		19.625	3.828	23.452
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100		7364.827	14330.622	21695.449
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	35	.000	.000	.000	.000		2.313	0.624	2.937
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014		868.026	2335.479	3203.505
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	35	.000	.000	.000	.000		3.635	0.980	4.615
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023		1364.040	3670.039	5034.079
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	35	0.001	.000	.000	.000		14.337	2.929	17.266
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088		5380.415	10965.426	16345.841
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	35	0.001	.000	.000	.000		7.038	1.614	8.652
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069		2641.255	6041.939	8683.194
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	35	0.001	.000	.000	.000		6.218	1.677	7.895
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085		2333.502	6278.440	8611.942
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	840	44.147	535.974	580.121
				Additives & Reagents	35	.000	.000	.000	.000		0.079	0.096	0.175
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.053	0.059	0.005	0.064		44.226	536.070	580.296

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	65	5.500	13.015	18.515
				Additives & Reagents	35	.000	.000	.000	.000		0.010	0.002	0.012
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.085	0.012	0.008	0.020		5.510	13.018	18.527
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	50	5.641	13.349	18.990
				Additives & Reagents	35	.000	.000	.000	.000		0.010	0.002	0.012
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027		5.651	13.351	19.002
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	95	18.756	44.385	63.142
				Additives & Reagents	35	.000	.000	.000	.000		0.034	0.008	0.042
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047		18.790	44.393	63.183
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	98	9.674	22.893	32.568
				Additives & Reagents	35	.000	.000	.000	.000		0.017	0.004	0.021
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023		9.692	22.898	32.589

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDICES: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.380	0.521	0.331	0.852				
				Additives & Reagents	35	0.008	0.001	0.001	0.002		24617.366	56027.091	80644.456
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000				
				TOTAL	19587	3.388	0.522	0.332	0.854				

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 2: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	35	0.001	.000	.000	.000		4.665	1.201	5.867
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168		2610.924	6710.721	9321.645
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	35	0.001	.000	.000	.000		19.625	3.828	23.452
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100		7364.827	14330.622	21695.449
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	35	.000	.000	.000	.000		2.313	0.624	2.937
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014		868.026	2335.479	3203.505
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	35	.000	.000	.000	.000		3.635	0.980	4.615
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023		1364.040	3670.039	5034.079
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	35	0.001	.000	.000	.000		14.337	2.929	17.266
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088		5380.415	10965.426	16345.841
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	35	0.001	.000	.000	.000		7.038	1.614	8.652
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069		2641.255	6041.939	8683.194
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	35	0.001	.000	.000	.000		6.218	1.677	7.895
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085		2333.502	6278.440	8611.942

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE I	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546		22562.989	50332.666	72895.654
				Additives & Reagents	35	0.006	0.001	0.001	0.001				
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000				
				TOTAL	19587	2.349	0.317	0.230	0.547				

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	720.895	1105.618
				Additives & Reagents	35	.000	.000	.000	.000		0.671	0.131	0.802
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016		375.393	731.026	1106.420
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	35	.000	.000	.000	.000		0.277	0.075	0.352
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025		155.142	417.749	572.891
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	1700	174.222	469.884	644.106
				Additives & Reagents	35	.000	.000	.000	.000		0.312	0.084	0.396
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.103	0.018	0.010	0.028		174.534	469.968	644.502
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	50	7.051	16.686	23.737
				Additives & Reagents	35	.000	.000	.000	.000		0.013	0.003	0.016
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033		7.064	16.689	23.753
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	260	29.333	69.415	98.748
				Additives & Reagents	35	.000	.000	.000	.000		0.053	0.012	0.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027		29.386	69.427	98.813

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128				
				Additives & Reagents	35	0.001	.000	.000	.000		741.519	1704.059	2446.3780
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000				
				TOTAL	19587	0.529	0.076	0.052	0.128				

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A   TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI ION'LF 4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES @ A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. OEN to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-IN to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	10100	36.162	136.338	172.500
				Additives & Reagents	5	.000	.000	.000	.000		0.181	0.068	0.249
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001		36.343	136.406	172.749
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	2629	0.009	0.001	0.001	0.002		208.682	49.383	258.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018		1680.884	3533.239	5214.123
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	2629	0.036	0.005	0.004	0.009		51.881	12.277	64.159
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069		417.892	878.414	1296.305
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	2629	0.061	0.008	0.006	0.014		82.525	19.529	102.053
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116		664.717	1397.243	2061.960
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	1840	272.295	734.390	1006.685
				Additives & Reagents	2634	0.020	0.003	0.002	0.005		36.694	9.897	46.591
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029		198.851	53.631	252.482
				TOTAL	36454	0.276	0.047	0.027	0.074		507.841	797.917	1305.758
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	1840	14.988	40.422	55.410
				Additives & Reagents	5	.000	.000	.000	.000		0.075	0.020	0.095
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031		214.147	57.756	271.904
				TOTAL	15278	0.125	0.021	0.012	0.034		229.210	98.199	327.409
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	1840	40.351	65.279	105.630
				Additives & Reagents	5	.000	.000	.000	.000		0.202	0.033	0.235
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051		576.551	93.272	669.823
				TOTAL	15278	0.335	0.021	0.033	0.054		617.104	158.583	775.687

OWMC PHASE 4a - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	RECEPTOR INDICES: TOTAL INDEX
4. Hwy. 25 to First Line E.	3.3	6.2	0.06	Special Wastes	0	0.000	0.000	0.000	0.000	470	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069		242.246	32.462	274.708
				TOTAL	14274	0.515	0.019	0.051	0.069		242.246	32.462	274.709
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.098
				TOTAL	14274	1.140	0.031	0.112	0.143		911.636	114.463	1026.098
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	3	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	390	54.983	130.112	185.095
				Additives & Reagents	2614	0.019	0.003	0.002	0.004		7.409	1.753	9.163
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		40.153	9.502	49.654
				TOTAL	36454	0.263	0.036	0.026	0.062		102.545	141.368	243.912

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272				
				Additives & Reagents	2614	0.145	0.021	0.014	0.035				
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348		5808.530	8782.540	14591.085
				TOTAL	36454	3.550	0.307	0.348	0.655				

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI IN/LF 4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-IN	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-IN to Britannia Rd.	1	0.0	0.00	Special Wastes	10547	0.066	0.019	0.007	0.025	10100	671.372	2531.191	3202.563
				Additives & Reagents	30	.000	.000	.000	.000		1.086	0.409	1.495
				Inter Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.067	0.019	0.007	0.025		672.458	2531.600	3204.058
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	30	.000	.000	.000	.000		2.381	0.564	2.945
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.067	0.009	0.007	0.016		1474.584	3484.420	4959.004
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	30	.000	.000	.000	.000		0.592	0.140	0.732
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.255	0.035	0.025	0.060		366.603	866.276	1232.879
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	30	0.001	.000	.000	.000		0.942	0.223	1.165
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.429	0.059	0.042	0.101		583.134	1377.937	1961.071
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.02	Special Wastes	10547	0.151	0.026	0.015	0.041	1040	270.254	750.459	1020.713
				Additives & Reagents	30	.000	.000	.000	.000		0.450	0.121	0.571
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.151	0.026	0.015	0.041		270.704	750.580	1021.284
3. Third Line to Hwy. 25	1.4	3.5	4.98	Special Wastes	10547	0.407	0.026	0.040	0.066	1040	749.144	1211.932	1961.077
				Additives & Reagents	30	0.001	.000	.000	.000		1.212	0.196	1.409
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	10577	0.408	0.026	0.040	0.066		750.356	1212.128	1962.485
5. First Line E. to LF-4N	2.2	0.1	17.02	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	1.140	0.071	0.112	0.183		911.636	114.463	1026.099
				TOTAL	14274	1.140	0.071	0.112	0.183		911.636	114.463	1026.099

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	1060	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.002
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		109.133	25.825	134.958
				TOTAL	14274	0.103	0.014	0.010	0.024		109.133	25.825	134.958

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDICES: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323		5544.727	11857.486	17402.212
				Additives & Reagents	35	0.002	.000	.000	0.001				
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167				
				TOTAL	33855	2.656	0.231	0.260	0.491				

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196. applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 6: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. OEN to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	35	.000	.000	.000	.000		0.671	0.131	0.802
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016		375.393	731.026	1106.420
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	35	.000	.000	.000	.000		0.277	0.075	0.352
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025		155.142	417.749	572.891
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	1700	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020		127.192	34.304	161.496
				TOTAL	14274	0.075	0.013	0.007	0.020		127.192	34.304	161.496
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	50	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024		5.148	1.218	6.366
				TOTAL	14274	0.103	0.014	0.010	0.024		5.148	1.218	6.366
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	260	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019		21.415	5.068	26.482
				TOTAL	14274	0.082	0.011	0.008	0.019		21.415	5.068	26.482

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040				
				Additives & Reagents	35	.000	.000	.000	.000		684.289	1189.365	1873.6543
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064				
				TOTAL	33861	0.432	0.062	0.042	0.104				

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T."
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-Site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS (POPULATION) WITH RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-9C CASE I (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	35	0.001	.000	.000	.000			0.022	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			123.839	28.449
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	147	0	185.630	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.033	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127			185.663	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	35	0.001	.000	.000	.000			0.207	0.157
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			774.574	589.437
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	35	.000	.000	.000	.000			0.006	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			22.188	18.010
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	35	.000	.000	.000	.000			0.001	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			4.302	0.679
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	35	0.001	.000	.000	.000			0.012	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			44.955	19.392
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	35	0.001	.000	.000	.000			0.004	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			13.730	17.849
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	35	0.001	.000	.000	.000			0.010	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			37.131	13.502
C. REGIONAL ROAD 65													
1. Hwy.20 to Frick Rd.	3	0.2	0.60	Special Wastes	19552	0.057	0.059	0.005	0.064	77	7	49.131	4.465
				Additives & Reagents	35	.000	.000	.000	.000			0.009	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.057	0.059	0.005	0.064			49.140	4.467

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.005	0.012	0.008	0.020	0	4	0.000	0.801
				Additives & Reagents	35	.000	.000	.000	.000			0.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.005	0.012	0.008	0.020			0.000	0.801
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	7	0.000	1.869
				Additives & Reagents	35	.000	.000	.000	.000			0.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	1.869
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	4	11	1.869	5.139
				Additives & Reagents	35	.000	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			1.869	5.140
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	1257.390	699.596
				Additives & Reagents	35	0.008	0.001	0.001	0.002	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	3.388	0.522	0.332	0.854	TOTAL	12573.901	699.596

: SUM OF WEIGHTED TOTALS 13273.497

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWNC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE B: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWNC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWNC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	35	0.001	.000	.000	.000			0.022	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			123.839	28.449
B. VINELAND TOWLINE ROAD (RR.24)													
1. OEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	35	0.001	.000	.000	.000			0.207	0.157
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			774.574	589.437
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	10.005
				Additives & Reagents	35	.000	.000	.000	.000			0.006	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			22.188	10.010
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	35	.000	.000	.000	.000			0.001	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			4.302	0.679
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	35	0.001	.000	.000	.000			0.012	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			44.955	19.392
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.044
				Additives & Reagents	35	0.001	.000	.000	.000			0.004	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			13.730	17.049
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	35	0.001	.000	.000	.000			0.010	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			37.131	13.502

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: RESIDENTS	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.20	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1020.718	687.319
				Additives & Reagents	35	0.006	0.001	0.001	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	2.349	0.317	0.230	0.547	TOTAL	10207.177	687.319

SUM OF WEIGHTED TOTALS	10894.496

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 9: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	35	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			1.474	1.474
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	3	0	1.001	0.000
				Additives & Reagents	35	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			1.001	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	2.476	1.474
				Additives & Reagents	35	0.001	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	0.529	0.076	0.052	0.128	TOTAL	24.758	1.474

SUM OF WEIGHTED TOTALS	26.232

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. OEN to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	160	85	13.023	7.343
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.030	7.347
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	3	0	0.040	0.000
				Additives & Reagents	5	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.041	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Berry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.111	0.051
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			7.930	3.660
3. Berry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.732	0.043
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.040	0.116			52.397	3.082
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	19	3	7.583	1.197
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.102	0.016
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.554	0.087
				TOTAL	36454	0.276	0.047	0.027	0.074			8.239	1.301
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	38	10	0.835	0.220
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			1.193	0.314
				TOTAL	15278	0.125	0.021	0.012	0.034			2.028	0.534
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	26	3	0.922	0.106
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			1.318	0.152
				TOTAL	15278	0.335	0.021	0.033	0.054			2.241	0.259

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	3	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000	0.207
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000	0.207
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	1.431
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	1.431
F. FIFTH LINE (LOCAL) 1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	3	0.000	30.033
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	3.004
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	3.024
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000	36.062

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	94.917	54.989
				Additives & Reagents	2634	0.145	0.021	0.014	0.035	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348	CORRIDOR WEIGHTED		
				TOTAL	36454	3.550	0.307	0.348	0.655	TOTAL	949.165	54.989

SUM OF WEIGHTED TOTALS 1004.075

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	157	79	13.564	6.825
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.003
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.570	6.828
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	3	0	0.752	0.000
				Additives & Reagents	30	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.752	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.019	3.609
				Additives & Reagents	30	.000	.000	.000	.000			0.001	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			7.021	3.609
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	30	0.001	.000	.000	.000			0.008	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			51.673	3.040
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	38	10	15.499	4.079
				Additives & Reagents	30	.000	.000	.000	.000			0.003	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			15.501	4.079
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	26	3	17.125	1.976
				Additives & Reagents	30	0.001	.000	.000	.000			0.003	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.408	0.026	0.040	0.066			17.128	1.976
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	1.431
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	1.431

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS PI-IN LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	114.656	21.990
				Additives & Reagents	35	0.002	.000	.000	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167	CORRIDOR WEIGHTED		
				TOTAL	33855	2.656	0.231	0.260	0.491	TOTAL	1146.559	21.990
										SUM OF WEIGHTED TOTALS		1168.550

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 12: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS PI-27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 90	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 90 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	35	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			1.474	1.474
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	3	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.073	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.073	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Harris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	1.547	1.474
				Additives & Reagents	35	.000	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064	CORRIDOR WEIGHTED		
				TOTAL	33861	0.432	0.062	0.042	0.104	TOTAL	15.475	1.474

SUM OF WEIGHTED TOTALS 16.949

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidifiration treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY AND RECREATIONAL FEATURES WITH RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-3C CASE I (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000	0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	1	0	1.263	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127			1.263	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			1.001	2.001
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000	0.000
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.053	0.059	0.005	0.064			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
B. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.000	0.020	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.085	0.012	0.000	0.020			0.000	0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			0.000	0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: COMM. & REC. FEATURES	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	2.264	2.001
				Additives & Reagents	35	0.008	0.001	0.001	0.002	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	3.388	0.522	0.332	0.854	TOTAL	22.638	2.001

SUM OF WEIGHTED TOTALS	24.639

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the produrt of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 14: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			1.001	2.001
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: COMM. & REC. FEATURES	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1.001	2.001
				Additives & Reagents	35	0.006	0.001	0.001	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	2.349	0.317	0.230	0.547	TOTAL	10.007	2.001
										SUM OF WEIGHTED TOTALS		12.009

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 15: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-1E CASE 1 (1) RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: COMM. & REC. FEATURES	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	0.529	0.076	0.052	0.128	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.0	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.0	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	999	0.004	0.001	.000	0.001	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.01	Special Wastes	10547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	10547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	10547	0.420	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000	0.000
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0	0.000	0.000
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.000	0.000
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.000	0.000
				TOTAL	36454	0.276	0.047	0.027	0.074			0.000	0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.000	0.000
				TOTAL	15278	0.125	0.021	0.012	0.034			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.000	0.000
				TOTAL	15278	0.335	0.021	0.033	0.054			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000	0.000
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	0.000
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.84	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.145	0.021	0.014	0.035	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	2.296	0.123	0.225	0.348	CORRIDOR WEIGHTED TOTAL	0.000	0.000
				TOTAL	36454	3.550	0.307	0.348	0.655			

SUM OF WEIGHTED TOTALS	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residences" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			0.000	0.000
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	0	0	0.000	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.408	0.026	0.040	0.066			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000	0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	0.000	0.000
				Additives & Reagents	2634	0.002	.000	.000	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	1.243	0.046	0.122	0.167	CORRIDOR WEIGHTED		
				TOTAL	36454	2.656	0.231	0.260	0.491	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.000	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.000	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.002	0.000			0.000	0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENCES 0 - 150 (m)	RECEPTOR INDEX: RESIDENCES 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	6.000	0.000
				Additives &-Reagents	2634	.000	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	14274	0.260	0.039	0.025	0.064	CORRIDOR WEIGHTED		
				TOTAL	36460	0.432	0.062	0.042	0.104	TOTAL	0.000	0.000
										SUM OF WEIGHTED TOTALS		0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR SURFACE WATER SPILL PATHWAY USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - TOTAL SOLIDIFICATION

Note: The indicator developed is for "surface water suitability" as disucssed in Chapter 8, section 3 of the M.M. Dillon - Transportation report. "Surface water spill pathway" is a sub-indicator which was combined with the sub-indicator, "downstream water uses" in the report, Gartner Lee Associates Ltd., 1985, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Surface Water.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.651	0.104	0.064	0.168			0.126	
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	400	0.10	0.126	166
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.491	0.078	0.048	0.127			0.126	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.514	0.050	0.050	0.100			0.016	
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.054	0.009	0.005	0.014			0.098	
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.433	0.046	0.042	0.088			0.520	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.300	0.039	0.029	0.069			0.260	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.314	0.054	0.031	0.085			0.167	
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.057	0.059	0.005	0.064	460	0.15	0.098	289
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.057	0.059	0.005	0.064			0.098	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF 3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
D. FRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	100	0.17	0.033	45
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.085	0.012	0.008	0.020			0.033	
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	100	0.07	0.033	45
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.198	0.027	0.019	0.047			0.033	
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	110	0.16	0.017	43
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.099	0.014	0.010	0.023			0.017	
											TOTAL INDEX	1.494	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 20: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE I (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.651	0.104	0.064	0.168			0.126	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.514	0.050	0.050	0.100			0.016	
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.054	0.009	0.005	0.014			0.098	
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.433	0.046	0.042	0.088			0.520	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.300	0.039	0.029	0.069			0.260	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.314	0.054	0.031	0.085			0.167	
										TOTAL INDEX		1.186	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 21: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	
											TOTAL INDEX	0.000	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are. 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0.00	0.000	0
				Additives & Reagents	5	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.076	0.011	0.007	0.018			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.290	0.040	0.028	0.069			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	128
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.003	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	21176	0.489	0.068	0.048	0.116			0.185	
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	250	0.19	0.077	77
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.001	
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.006	
				TOTAL	36454	0.276	0.047	0.027	0.074			0.083	
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	320	0.23	0.005	35
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.007	
				TOTAL	15278	0.125	0.021	0.012	0.034			0.012	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	715	0.51	0.018	32
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.026	
				TOTAL	15278	0.335	0.021	0.033	0.054			0.044	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI 13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (m)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	200	0.15	0.000	32
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.011	
				TOTAL	14274	0.515	0.019	0.051	0.069			0.011	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.020	
				TOTAL	14274	1.140	0.031	0.112	0.143			0.020	
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	400	0.40	0.133	36
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.002	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.010	
				TOTAL	36454	0.263	0.036	0.026	0.062			0.145	
											TOTAL INDEX	0.579	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI-IN/LF 4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (m)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-IN to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0.00	0.000	0
				Additives & Reagents	30	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.067	0.019	0.007	0.025			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.067	0.009	0.007	0.016			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.255	0.035	0.025	0.060			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	120
				Additives & Reagents	30	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.429	0.059	0.042	0.101			0.182	
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	320	0.23	0.093	75
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.151	0.026	0.015	0.041			0.093	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	715	0.51	0.336	[illegible]
				Additives & Reagents	30	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.408	0.026	0.040	0.066			0.336	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	1.140	0.035	0.112	0.147			0.020	
				TOTAL	14274	1.140	0.035	0.112	0.147			0.020	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD FIS DATA FOR SURFACE WATER SPILL PATHWAY - FI-INTLF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
E. FIRST LINE EAST (LOCAL)													
1. FI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	100	0.10	0.000	23
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.002	
				TOTAL	14274	0.103	0.014	0.010	0.024			0.002	
										TOTAL INDEX		0.712	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 24: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES & REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000	
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000	
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000	
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000	
											TOTAL INDEX	0.000	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - TOTAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.491	0.078	0.048	0.127			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. DEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			0.922
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	35	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.101
5. Ninth Ave. to RR. 216	5	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.057
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000
C. REGIONAL ROAD 65												
1. Hwy.20 to Krick Rd.	5	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.053	0.059	0.005	0.064			0.000

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
D. BRICK ROAD (LOCAL)												
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.085	0.012	0.008	0.020			0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000
										TOTAL INDEX		1.111

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 26: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1962 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			0.922
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	35	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.101
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.057
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000
										TOTAL INDEX		1.111

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited. Febuary/March 1965.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 27: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC. MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. OEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000
										TOTAL INDEX		0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2. TOTAL SOLIDIFICATION

TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL (10)	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. HIGHWAY 25												
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	100	0.10	0.001
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.001
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	2629	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.076	0.011	0.007	0.018			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	2629	0.036	0.005	0.004	0.009			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.290	0.040	0.028	0.069			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	2629	0.061	0.008	0.006	0.014			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	21176	0.489	0.068	0.048	0.116			0.000
D. BRITANNIA ROAD												
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0.00	0.000
				Additives & Reagents	2634	0.020	0.003	0.002	0.005			0.000
				Inter-Site Transfers	14274	0.108	0.019	0.011	0.029			0.000
				TOTAL	36454	0.276	0.047	0.027	0.074			0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	14274	0.116	0.020	0.011	0.031			0.000
				TOTAL	15278	0.125	0.021	0.012	0.034			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	250	0.18	0.006
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	14274	0.313	0.020	0.031	0.051			0.009
				TOTAL	15278	0.335	0.021	0.033	0.054			0.015

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL (10)	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.515	0.019	0.051	0.069			0.000
				TOTAL	14274	0.515	0.019	0.051	0.069			0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000
F. FIFTH LINE (LOCAL)												
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	2634	0.019	0.003	0.002	0.004			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	36454	0.263	0.036	0.026	0.062			0.000
											TOTAL INDEX	0.036

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.
10. No potential for rail transport of additives and reagents to this site.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-1N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. HIGHWAY 25												
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	100	0.10	0.025
				Additives & Reagents	30	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.025
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			0.000
D. BRITANNIA ROAD												
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	250	0.18	0.118
				Additives & Reagents	30	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.408	0.026	0.040	0.066			0.118
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	1.140	0.031	0.112	0.143			0.000
				TOTAL	14274	1.140	0.031	0.112	0.143			0.000

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. TOTAL SOLIDIFICATION   TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS PI-IN LF-4M CASE 2 (1)   RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m) (6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
E. FIRST LINE EAST (LOCAL)												
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000
											TOTAL INDEX	0.162

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, TOTAL SOLIDIFICATION

TABLE 30: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS : PI-27E/LF-1E CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.075	0.013	0.007	0.020			0.000
				TOTAL	14274	0.075	0.013	0.007	0.020			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.103	0.014	0.010	0.024			0.000
				TOTAL	14274	0.103	0.014	0.010	0.024			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	14274	0.082	0.011	0.008	0.019			0.000
				TOTAL	14274	0.082	0.011	0.008	0.019			0.000
											TOTAL INDEX	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

TABLE 31

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT FOR THE TOTAL ACCESS ROAD SYSTEM USING TOTAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Site/Site Combinations and Operating Case	Two-Way Annual Accident Involvement[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	3.380	3.170	6.550
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.008	0.040	0.049
TOTAL	3.388	3.211	6.599
LF-9C			
Special Waste Transport	2.344	3.171	5.515
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.006	0.040	0.045
TOTAL	2.349	3.211	5.560
LF-1E			
Special Waste Transport	0.528	5.390	5.918
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.001	0.044	0.045
TOTAL	0.529	5.434	5.963

OWMC PHASE 4A - TRANSPORTATION
TABLE 2
TWO-WAY ANNUAL ACCIDENT INVOLVEMENT FOR THE TOTAL ACCESS ROAD SYSTEM USING TOTAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS
(Continued)

Site/Site Combinations and Operating Case	Two-Way Annual Accident Involvement[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	1.109	1.964	3.073
Inter-Site Transfers	2.296	-	2.296
Additives & Reagent Transport	0.145	0.482	0.627
TOTAL	3.550	2.446	5.996
PI-1N/LF-4N			
Special Waste Transport	1.411	1.962	3.373
Inter-Site Transfers	1.243	-	1.243
Additives & Reagent Transport	0.002	0.034	0.036
TOTAL	2.656	1.996	4.652
PI-27E/LF-1E			
Special Waste Transport	0.172	5.388	5.560
Inter-Site Transfers	0.260	-	0.260
Additives & Reagent Transport	0.000	0.045	0.045
TOTAL	0.432	5.433	5.864

TABLE 32: ANNUAL NUMBER OF SPILLS FOR THE TOTAL ACCESS ROAD SYSTEM - TOTAL SOLIDIFICATION USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Site/Site Combination and Operating Case	Local & Regional Access Roads			Province Wide Access Roads			Total Access Road System		
	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total
CASE 1 INTEGRATED									
LF-3C									
Special Waste Transport	0.521	0.331	0.852	1.003	0.311	1.314	1.524	0.642	2.166
Additive & Reagent Transport	0.001	0.001	0.002	0.016	0.004	0.020	0.017	0.005	0.022
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.522	0.332	0.854	1.019	0.315	1.334	1.541	0.647	2.188
LF-9C									
Special Waste Transport	0.316	0.230	0.546	1.003	0.311	1.314	1.319	0.540	1.860
Additive & Reagent Transport	0.001	0.001	0.002	0.016	0.004	0.020	0.016	0.004	0.021
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.317	0.230	0.547	1.019	0.315	1.334	1.336	0.545	1.880
LF-1E									
Special Waste Transport	0.076	0.052	0.128	1.507	0.528	2.035	1.583	0.580	2.163
Additive & Reagent Transport	0.000	0.000	0.000	0.017	0.004	0.021	0.017	0.004	0.022
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.076	0.052	0.128	1.524	0.532	2.056	1.601	0.584	2.185
CASE 2 SEPARATE LANDFILL									
PI-13N/LF-4N									
Special Waste Transport	0.163	0.109	0.272	1.025	0.192	1.217	1.188	0.301	1.489
Additive & Reagent Transport	0.021	0.014	0.035	0.238	0.047	0.285	0.259	0.061	0.320
Inter-Site Transfers	0.123	0.225	0.348	0.000	0.000	0.000	0.123	0.225	0.348
TOTAL	0.307	0.348	0.655	1.263	0.239	1.502	1.570	0.588	2.157
PI-1N/LF-4N									
Special Waste Transport	0.185	0.138	0.323	1.025	0.192	1.217	1.210	0.331	1.541
Additive & Reagent Transport	0.000	0.000	0.001	0.014	0.004	0.018	0.014	0.004	0.018
Inter-Site Transfers	0.046	0.122	0.167	0.000	0.000	0.000	0.046	0.122	0.167
TOTAL	0.231	0.260	0.491	1.039	0.196	1.235	1.270	0.456	1.726
PI-27E/LF-1E									
Special Waste Transport	0.023	0.017	0.040	1.507	0.528	2.035	1.531	0.545	2.075
Additive & Reagent Transport	0.000	0.000	0.000	0.017	0.004	0.021	0.017	0.004	0.021
Inter-Site Transfers	0.039	0.025	0.064	0.000	0.000	0.000	0.039	0.025	0.064
TOTAL	0.062	0.420	0.104	1.524	0.532	2.056	1.586	0.575	2.161

Notes: 1. Based on one spill per million vehicle kilometers
2. Derived using a conditional probability of 0.196 applied to the one-way OWMC annual accident involvement.

OWMC PHASE 4A - TRANSPORTATION

TABLE 33

FACTOR/INDICATOR VALUES FOR EACH SITING OPTION USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS (TOTAL SOLIDIFICATION)

		Values at Each Siting Option					
Factor	Indicator	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E
1. Province-wide Hazard based Spill Index	a) Spills Index due to motor vehicle accidents	3.110	3.110	5.284	1.924	1.967	5.284
	b) Spills Index due to non-motor vehicle accidents	10.046	10.046	15.087	10.264	10.488	15.087
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	10894.5	13273.5	26.2	1168.6	1004.1	16.9
	b) Road User Risk Index	50.33	56.03	1.70	11.86	8.78	1.19
	c) Sensitive Uses Risk Index	12.01	24.64	0	0	0	0
	d) Surface Water Suitability Risk Index	1.186 (4)	1.494 (5)	0 1	0.712 3	0.579 3	0 1
	e) Sensitive Hydrogeologic Lands Risk Index	1.111	1.111	0	0.162	0.036	0
3. Province-wide Accident Involvements	a) Annual Accident Involvements by OWMC generated trucks	3.21	3.21	5.43	2.00	2.44	5.43
4. Risks due to Accident Involvements on Local and Regional Access Roads	a) Road User Risks	22.56	24.62	0.74	5.55	5.81	0.68

NOTE: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 34

FACTOR/INDICATOR VALUES FOR EACH SITING OPTION

USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

(TOTAL SOLIDIFICATION)

			Scaled Value (and Scaled Value x Indicator Weighting) for Each Siting Option						
Factor	Indicator	Weight	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E	Maximum Base Case
1. Province-wide Hazard Based Spill Index	a) Spill Index due to motor vehicle accidents	1	3.110	3.110	5.284	1.924	1.967	5.284	
	b) Spill Index due to non-motor vehicle accidents	1	10.046	10.046	15.087	10.264	10.488	15.087	
	Aggregated Factor Score:		13.156	13.156	20.371	12.188	12.455	20.371	21.012
	Factor Suitability Level:		-3.13	-3.13	-4.85	-2.90	-2.96	-4.85	
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	5	0.81(4.03)	0.98(4.91)	0.002(0.01)	0.09(0.43)	0.07(0.37)	0.001(0.01)	13512.9
	b) Road User Risk Index	4	0.88(3.53)	0.98(3.93)	0.03 (0.12)	0.21(0.83)	0.15(0.62)	0.02(0.08)	57.06
	c) Sensitive Uses Risk Index	3	0.48(1.44)	0.98(2.95)	0 (0)	0 (0)	0 (0)	0 (0)	25.05
	d) Surface Water Suitability Risk Index	2	0.80(1.60)	1.00(2.00)	0.20 (0.40)	0.60(1.20)	0.60(1.20)	0.20(0.40)	5
	e) Sensitive Hydrogeologic Lands Risk Index	1	0.98(0.98)	0.98(0.98)	0 (0)	0.14(0.14)	0.03(0.03)	0 (0)	1.133
	Aggregated Factor Score:		11.58	14.77	0.53	2.60	2.22	0.49	15.00
	Factor Suitability Level:		-3.86	-4.92	-0.18	-0.87	-0.74	-0.16	
3. Province-wide Accident Involvements	a) Annual Number of Accident Involvements by OWMC generated trucks	1	0.46(0.46)	0.46(0.46)	0.78 (0.78)	0.29(0.29)	0.35(0.35)	0.78(0.78)	
	Factor Suitability Level:		-2.32	-2.32	-3.92	-1.45	-1.76	-3.92	6.92
4. Risks due to Accident Involvements on Local and Regional Roads	a) Road User Risks	1	0.77(0.77)	0.84(0.84)	0.03 (0.03)	0.19(0.19)	0.20(0.20)	0.02(0.02)	29.18
	Factor Suitability Level:		-3.86	-4.22	-0.13	-0.95	-1.00	-0.12	

NOTE: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 35

AGGREGATION OF TRANSPORTATION RISK FACTORS USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

(TOTAL SOLIDIFICATION)

		Factor Suitability (and Suitability x Weight) for each Siting Option					
Factor	Weight	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E
1. Province-wide Hazard Based Spill Index	8	-3.13 (-25.0)	-3.13 (-25.0)	-4.85 (-38.8)	-2.90 (-23.2)	-3.0 (-24.0)	-4.85 (-38.8)
2. Spill Risks on Local and Regional Roads	10	-3.86 (-38.6)	-4.92 (-49.2)	-0.18 (-1.8)	-0.87 (-8.7)	-0.7 (-7.0)	-0.16 (-1.6)
Aggregated Value for Spill Factors:		-63.6	-74.2	-40.6	-31.9	-31.0	-40.4
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd
3. Province-wide Accident Involvements	8	-2.32 (-18.6)	-2.32 (-18.6)	-3.92 (-31.4)	-1.45 (-11.6)	-1.8 (-14.4)	-3.92 (-31.4)
4. Accident Involvement Risks on Local and Regional Roads	10	-3.86 (-38.6)	-4.22 (-42.2)	-0.13 (-1.3)	-0.95 (-9.5)	-1.0 (-10.0)	-0.12 (-1.2)
Aggregated Value for Accident Involvement Factors:		-57.2	-60.8	-32.7	-21.1	-24.4	-32.6
Site Option Ranking:		5th	6th	4th	1st	1st	3rd
Aggregated Value for all Factors:		-120.8	-135.0	-73.3	-53.0	-55.4	-73.0
Site Option Ranking:		5th	6th	4th	1st	1st	3rd

NOTE: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 36

RANKING OF SITES: BASE CASE AND USE OF RAIL FOR ADDITIVE AND REAGENT TRANSPORT

(TOTAL SOLIDIFICATION)

Rank	Siting Option	Aggregated Factor Score	Aggregated Factor Suitability Level
1st	PI-1N/LF-4N - with rail	53.0	-1.74
2nd	PI-13N/LF-4N	55.4	-1.82
3rd	PI-1N/LF-4N	58.4	-1.92
4th	PI-27E/LF-1E - with rail	73.0	-2.40
5th	LF-1E - with rail	73.3	-2.41
6th	PI-27E/LF-1E	84.0	-2.76
6th	LF-1E	84.0	-2.76
8th	LF-9C - with rail	120.8	-3.97
9th	LF-3C - with rail	135.0	-4.44
10th	LF-9C	137.0	-4.51
11th	LF-3C	152.0	-5.00

APPENDIX O

DATA FOR SENSITIVITY ANALYSIS USING PARTIAL SOLIDIFICATION

Local and Regional Access Road Spill Risk Indices for Facility Site Options Used During Detailed Comparative Analysis

- Road User Risk Indices - Tables 1-6 (pp. O-3 to O-13)
  - Accident Involvement Risk Index
  - Total Spill Risk Index

- Residents (Population) Risk Index - Tables 7-12 (pp. O-15 to O-25)

- Sensitive Community & Recreational Features Risk Index - Tables 13-18 (pp. O-27 to O-37)

- Surface Water Spill Pathway Risk Index - Tables 19-24 (pp. O-39 to O-48)

- Sensitive Hydrogeologic Lands Risk Index - Tables 25-30 (pp. O-49 to O-58)

Factor and Indicator Values for Each Siting Option - Table 31 (p. O-59)

Scaled Factor and Indicator Values for Each Siting Option - Table 32 (p. O-60)

Aggregation of Transportation Risk Factors - Table 33 (p. O-61)

Ranking of Sites - Table 34 (p. O-62)

LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PARTIAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	1222	0.041	0.006	0.004	0.010		162.891	41.934	204.826
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178		2769.150	6751.454	9520.604
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	4010	1966.988	5063.789	7030.776
				Additives & Reagents	1222	0.031	0.005	0.003	0.008		122.937	31.649	154.585
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.521	0.083	0.051	0.134		2089.924	5095.437	7185.361
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	1222	0.048	0.005	0.005	0.009		685.178	133.644	818.822
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109		8030.381	14460.438	22490.819
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	1222	0.005	0.001	.000	0.001		80.756	21.780	102.536
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016		946.468	2356.635	3303.104
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	1222	0.008	0.001	0.001	0.002		126.902	34.226	161.128
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025		1487.307	3703.284	5190.592
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	1222	0.040	0.004	0.004	0.008		500.561	102.261	602.822
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096		5866.640	11064.758	16931.397
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	1222	0.028	0.004	0.003	0.006		245.726	56.346	302.072
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075		2879.943	6096.671	8976.614
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	1222	0.029	0.005	0.003	0.008		217.095	58.551	275.646
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092		2544.379	6335.314	8879.693
C. REGIONAL ROAD 65													
1. Hwy.20 to Frick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	840	44.147	535.974	580.121
				Additives & Reagents	1222	0.003	0.004	.000	0.004		2.759	3.350	6.109
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.056	0.062	0.005	0.068		46.906	539.324	586.230

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
D. BRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	65	5.500	13.015	18.515
				Additives & Reagents	1222	0.005	0.001	0.001	0.001		0.344	0.081	0.425
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.090	0.012	0.009	0.021		5.844	13.097	18.940
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	50	5.641	13.349	18.990
				Additives & Reagents	1222	0.007	0.001	0.001	0.002		0.353	0.083	0.436
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028		5.994	13.432	19.426
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	95	18.756	44.385	63.142
				Additives & Reagents	1222	0.012	0.002	0.001	0.003		1.172	0.277	1.450
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.210	0.029	0.021	0.050		19.929	44.662	64.591
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	98	9.674	22.893	32.568
				Additives & Reagents	1222	0.006	0.001	0.001	0.001		0.605	0.143	0.748
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.105	0.015	0.010	0.025		10.279	23.037	33.315

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDICES: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	521142	26703.143	56497.544	83200.687
				Additives & Reagents	1222	0.263	0.039	0.026	0.065	39104			
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	20774	3.644	0.560	0.357	0.917	560246			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 2: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	1222	0.041	0.006	0.004	0.010		162.891	41.934	204.826
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178		2769.150	6751.454	9520.604
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	1222	0.048	0.005	0.005	0.009		685.178	133.644	818.822
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109		8030.381	14460.438	22490.819
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	1222	0.005	0.001	.000	0.001		80.756	21.780	102.536
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016		946.468	2356.635	3303.104
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	1222	0.008	0.001	0.001	0.002		126.902	34.226	161.128
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025		1487.307	3703.284	5190.592
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	1222	0.040	0.004	0.004	0.008		500.561	102.261	602.822
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096		5866.640	11064.758	16931.397
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	1222	0.028	0.004	0.003	0.006		245.726	56.346	302.072
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075		2879.943	6096.671	8976.614
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	1222	0.029	0.005	0.003	0.008		217.095	58.551	275.646
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092		2544.379	6335.314	8879.693

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	315846			
				Additives & Reagents	1222	0.199	0.026	0.019	0.046	26273	24524.268	50768.555	75292.822
				Inter-Site Transfers	0	0.002	0.000	0.000	0.000	0			
				TOTAL	20774	2.542	0.342	0.249	0.591	342119			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited. 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 3: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	1222	0.005	.000	.000	0.001		23.420	4.568	27.988
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.086	0.008	0.008	0.017		398.143	735.464	1133.606
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	1222	0.006	0.001	0.001	0.002		9.679	2.610	12.289
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026		164.543	420.285	584.828
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	1700	174.222	469.884	644.106
				Additives & Reagents	1222	0.006	0.001	0.001	0.002		10.889	2.937	13.826
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.109	0.019	0.011	0.029		185.111	472.820	657.932
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	50	7.051	16.686	23.737
				Additives & Reagents	1222	0.009	0.001	0.001	0.002		0.441	0.104	0.545
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.150	0.021	0.015	0.035		7.492	16.790	24.282
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	260	29.333	69.415	98.748
				Additives & Reagents	1222	0.007	0.001	0.001	0.002		1.833	0.434	2.267
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028		31.166	69.848	101.015

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	76253	786.456	1715.208	2501.6634
				Additives & Reagents	1222	0.033	0.005	0.003	0.008	4766			
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	20774	0.561	0.081	0.055	0.136	81019			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited. 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - FI 10N LF 4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	10100	36.162	136.338	172.500
				Additives & Reagents	5	.000	.000	.000	.000		0.181	0.068	0.249
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001		36.343	136.406	172.749
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	1217	0.004	0.001	.000	0.001		96.602	22.860	119.462
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017		1568.804	3506.716	5075.520
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	1217	0.017	0.002	0.002	0.004		24.017	5.683	29.700
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064		390.027	871.820	1261.847
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	1217	0.028	0.004	0.003	0.007		38.202	9.040	47.242
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108		620.394	1386.754	2007.148
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	1840	272.295	734.390	1006.685
				Additives & Reagents	1222	0.009	0.002	0.001	0.002		17.024	4.591	21.615
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014		95.065	25.639	120.705
				TOTAL	27592	0.209	0.036	0.020	0.056		384.384	764.621	1149.005
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	1840	14.988	40.422	55.410
				Additives & Reagents	5	.000	.000	.000	.000		0.075	0.020	0.095
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015		102.378	27.612	129.990
				TOTAL	7828	0.064	0.011	0.006	0.017		117.441	68.054	185.495
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	1840	40.351	65.279	105.630
				Additives & Reagents	5	.000	.000	.000	.000		0.202	0.033	0.235
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024		275.633	44.591	320.223
				TOTAL	7828	0.172	0.011	0.017	0.028		316.186	109.902	426.088

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA [illegible] 13N [illegible] 4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	RECEPTOR INDICES: TOTAL INDEX
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	470	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033		115.811	15.519	131.330
				TOTAL	6824	0.246	0.009	0.024	0.033		115.811	15.519	131.330
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
				TOTAL	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	390	54.983	130.112	185.095
				Additives & Reagents	1222	0.009	0.001	0.001	0.002		3.437	0.813	4.251
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012		19.196	4.543	23.738
				TOTAL	27592	0.199	0.028	0.020	0.047		77.616	135.468	213.085

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	163005			
				Additives & Reagents	1222	0.068	0.010	0.007	0.016	9697	4460.954	8544.237	13005.191
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166	58686			
				TOTAL	27592	2.274	0.231	0.223	0.454	231388			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI IN LF 4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. OEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-IN to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	10100	671.372	2531.191	3202.563
			•	Additives & Reagents	1217	0.004	0.001	.000	0.002		44.053	16.609	60.662
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.071	0.020	0.007	0.027		715.425	2547.800	3263.225
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	1217	0.004	0.001	.000	0.001		96.602	22.860	119.462
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017		1568.804	3506.716	5075.520
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	1217	0.017	0.002	0.002	0.004		24.017	5.683	29.700
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064		390.027	871.820	1261.847
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	1217	0.028	0.004	0.003	0.007		38.202	9.040	47.242
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108		620.394	1386.754	2007.148
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	1040	278.254	750.459	1028.713
				Additives & Reagents	1217	0.010	0.002	0.001	0.003		18.256	4.924	23.180
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.161	0.028	0.016	0.043		296.511	755.384	1051.895
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	1040	749.144	1211.933	1961.077
				Additives & Reagents	1217	0.027	0.002	0.003	0.004		49.157	7.952	57.109
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.434	0.028	0.043	0.070		798.301	1219.885	2018.186
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
				TOTAL	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549

OWMC PHASE 4A   TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA   PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	1060	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6024	0.049	0.007	0.005	0.012		52.173	12.346	64.520
				TOTAL	6024	0.049	0.007	0.005	0.012		52.173	12.346	64.520

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDICES: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	104731	5275.585	11849.682	17125.266
				Additives & Reagents	1222	0.090	0.011	0.009	0.020	11492			
				Inter-Site Transfers	6024	0.594	0.022	0.058	0.080	21037			
				TOTAL	27592	2.096	0.218	0.205	0.423	210060			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 6: LOCAL AND REGIONAL ACCESS ROAD USER (RS) LINK DATA (PI-27E LF-1E CASE 2 (1))

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.003	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	1222	0.005	.000	.000	0.001		23.420	4.568	27.988
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.086	0.009	0.008	0.017		398.143	735.464	1133.606
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	1222	0.006	0.001	0.001	0.002		9.679	2.610	12.289
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026		164.543	420.285	584.828
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	1700	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.076	0.006	0.004	0.010		60.807	16.400	77.207
				TOTAL	6824	0.076	0.006	0.004	0.010		60.807	16.400	77.207
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	50	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012		2.461	0.582	3.043
				TOTAL	6824	0.049	0.007	0.005	0.012		2.461	0.582	3.043
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	260	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009		10.238	2.423	12.660
				TOTAL	6824	0.039	0.005	0.004	0.009		10.238	2.423	12.660

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	23462			
				Additives & Reagents	1222	0.011	0.002	0.001	0.003	1466	636.192	1175.153	1811.345
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	10425			
				TOTAL	27598	0.307	0.047	0.030	0.077	43354			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T.".
7. The Total Spill Index is the product of the "Total Annual Number of Spills", the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS (POPULATION) - PARTIAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.774	0.178
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			124.590	28.622
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	147	0	185.630	0.000
				Additives & Reagents	1222	0.031	0.005	0.003	0.008			1.160	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.521	0.083	0.051	0.134			186.790	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			7.223	5.497
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			781.591	594.776
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.207	0.168
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			22.389	18.173
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.040	0.006
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			4.341	0.685
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.419	0.181
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			45.362	19.568
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.128	0.166
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			13.854	18.011
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.346	0.126
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			37.467	13.624
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	77	7	49.131	4.466
				Additives & Reagents	1222	0.003	0.004	.000	0.004			0.307	0.028
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.056	0.062	0.005	0.066			49.438	4.494

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.5 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	4	0.000	0.201
				Additives & Reagents	1222	0.005	0.001	0.001	0.001			0.000	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.090	0.012	0.009	0.021			0.000	0.206
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	7	0.000	1.969
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	0.012
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	1.981
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	4	11	1.869	5.139
				Additives & Reagents	1222	0.012	0.002	0.001	0.003			0.012	0.032
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.210	0.029	0.021	0.050			1.881	5.171
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.105	0.015	0.010	0.025			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	1267.703	705.812
				Additives & Reagents	1222	0.263	0.039	0.026	0.065	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	20774	3.644	0.560	0.357	0.917	TOTAL	12677.029	705.812

SUM OF WEIGHTED TOTALS	13382.841

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 8: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.774	0.178
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			124.590	28.622
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			7.223	5.497
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			781.591	594.776
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.207	0.168
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			22.389	18.173
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.040	0.006
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			4.341	0.685
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.419	0.181
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			45.362	19.568
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	28	26	13.726	17.844
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.128	0.166
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			13.854	18.011
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.346	0.126
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			37.467	13.624

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: RESIDENTS	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1029.594	693.460
				Additives & Reagents	1222	0.199	0.026	0.019	0.046	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	20774	2.542	0.342	0.249	0.591	TOTAL	10295.939	693.460

SUM OF WEIGHTED TOTALS 10989.399

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 9: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.009	0.009
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			1.483	1.483
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.109	0.019	0.011	0.029			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	3	0	1.001	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.006	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.150	0.021	0.015	0.035			1.007	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	2.491	1.483
				Additives & Reagents	1222	0.033	0.005	0.003	0.008	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	20774	0.561	0.081	0.055	0.136	TOTAL	24.908	1.483

SUM OF WEIGHTED TOTALS	26.391

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	160	85	13.823	7.343
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.830	7.347
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	999	0.004	0.001	.000	0.001	3	0	0.040	0.000
				Additives & Reagents	5	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.041	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.051	0.024
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			7.871	3.633
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.339	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			52.003	3.059
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	19	3	7.583	1.197
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.047	0.007
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.265	0.042
				TOTAL	27592	0.209	0.036	0.020	0.056			7.896	1.247
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	38	10	0.835	0.220
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.570	0.150
				TOTAL	7828	0.064	0.011	0.006	0.017			1.405	0.370
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	26	3	0.922	0.106
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.630	0.073
				TOTAL	7828	0.172	0.011	0.017	0.028			1.553	0.179

OMMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OMMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OMMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	3	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000	0.099
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000	0.099
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.684
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.684
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	3	0.000	30.033
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	3.002
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	3.012
				TOTAL	27592	0.199	0.028	0.020	0.047			0.000	36.047

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OMMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OMMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	92.809	53.691
				Additives & Reagents	1222	0.068	0.010	0.007	0.016	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166	CORRIDOR WEIGHTED		
				TOTAL	27592	2.274	0.231	0.223	0.454	TOTAL	928.094	53.691

SUM OF WEIGHTED TOTALS	981.785

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OMMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	157	79	13.564	6.825
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.003
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.570	6.828
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	3	0	0.752	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.002			0.005	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.020	0.007	0.027			0.757	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.051	0.024
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			7.871	3.633
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.339	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			52.003	3.059
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	38	10	15.499	4.079
				Additives & Reagents	1217	0.010	0.002	0.001	0.003			0.102	0.027
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.161	0.028	0.016	0.043			15.600	4.105
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	26	3	17.125	1.976
				Additives & Reagents	1217	0.027	0.002	0.003	0.004			0.112	0.013
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.434	0.028	0.043	0.070			17.238	1.989
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.684
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.684

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	115.250	21.325
				Additives & Reagents	1222	0.090	0.011	0.009	0.020	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.594	0.022	0.058	0.080	CORRIDOR WEIGHTED		
				TOTAL	27592	2.096	0.218	0.205	0.423	TOTAL	1152.502	21.325

SUM OF WEIGHTED TOTALS	1173.827

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 12: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING NUMBER OF RESIDENTS - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.009	0.009
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			1.483	1.483
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	3	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.035	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.035	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Norris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	1.518	1.483
				Additives & Reagents	1222	0.011	0.001	0.001	0.003	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	CORRIDOR WEIGHTED		
				TOTAL	27598	0.307	0.043	0.030	0.073	TOTAL	15.183	1.483
										SUM OF WEIGHTED TOTALS		16.666

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indicies are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY AND RECREATIONAL FEATURES - PARTIAL SOLIDIFICATION

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			0.000	0.000
2. LF-9C to RR. 63/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	1	0	1.263	0.000
				Additives & Reagents	1222	0.031	0.005	0.003	0.008			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.521	0.083	0.051	0.134			1.271	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			0.009	0.019
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			1.010	2.020
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.009	0.023	0	0	0.000	0.000
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			0.000	0.000
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0	0.000	0.000
				Additives & Reagents	1222	0.003	0.004	.000	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.056	0.062	0.005	0.068			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
0. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	0.001	0.001	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.090	0.012	0.009	0.021			0.000	0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0	0.000	0.000
				Additives & Reagents	1222	0.012	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.210	0.029	0.021	0.050			0.000	0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.105	0.015	0.010	0.025			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	2.200	2.020
				Additives & Reagents	1222	0.263	0.039	0.026	0.065	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	20774	3.644	0.560	0.357	0.917	TOTAL	22.005	2.020

SUM OF WEIGHTED TOTALS 24.025

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 14: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			0.000	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			0.009	0.019
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			1.010	2.020
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.20	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1.010	2.020
				Additives & Reagents	1222	0.199	0.026	0.019	0.046	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	20774	2.542	0.342	0.249	0.591	TOTAL	10.090	2.020
										SUM OF WEIGHTED TOTALS		12.110

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 15: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. OEW to RR. 90	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000	0.000
2. RR. 90 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.109	0.019	0.011	0.029			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.150	0.021	0.015	0.035			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128			
				Additives & Reagents	1222	0.033	0.005	0.003	0.008	TOTAL	0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHT	10.000	1.000
				TOTAL	20774	0.561	0.081	0.055	0.136	CORRIDOR WEIGHTED TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000	0.000
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0	0.000	0.000
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.000	0.000
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.000	0.000
				TOTAL	27592	0.209	0.036	0.020	0.056			0.000	0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.000	0.000
				TOTAL	7828	0.064	0.011	0.006	0.017			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.000	0.000
				TOTAL	7828	0.172	0.011	0.017	0.028			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000	0.000
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.000
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	27592	0.199	0.028	0.020	0.047			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	0.000	0.000
				Additives & Reagents	1222	0.068	0.010	0.007	0.016	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166	CORRIDOR WEIGHTED TOTAL	0.000	0.000
				TOTAL	27592	2.274	0.231	0.223	0.454			

SUM OF WEIGHTED TOTALS	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.020	0.007	0.027			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000	0.000
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0	0.000	0.000
				Additives & Reagents	1217	0.010	0.002	0.001	0.003			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.161	0.028	0.016	0.043			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	0	0	0.000	0.000
				Additives & Reagents	1217	0.027	0.002	0.003	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.434	0.028	0.043	0.070			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - FI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. FI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION FI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	0.000	0.000
				Additives & Reagents	1222	0.090	0.011	0.009	0.020	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.594	0.022	0.058	0.080	CORRIDOR WEIGHTED TOTAL	0.000	0.000
				TOTAL	27592	2.096	0.218	0.205	0.423			
										SUM OF WEIGHTED TOTALS		0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include; elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 18: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA USING COMMUNITY & RECREATIONAL FEATURES - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (DIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENCES 0 - 150 (m)	RECEPTOR INDEX: RESIDENCES 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	0.000	0.000
				Additives & Reagents	1222	0.011	0.001	0.001	0.003	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	CORRIDOR WEIGHTED		
				TOTAL	27598	0.307	0.043	0.030	0.073	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS 0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PARTIAL SOLIDIFICATION

Note: The indicator developed is for "surface water suitability" as discussed in Chapter 8, section 3, of the M.M. Dillon - Transportation report. "Surface water spill pathway" is a sub-indicator which was combined with the sub-indicator "downstream water uses" in the report, Gartner Lee Associates Ltd., 1985, Site Selection Process Phase 4A: Selection of a Preferred Site(s) - Surface Water.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.691	0.110	0.068	0.178			0.127	
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.040	0.126	400	0.10	0.126	166
				Additives & Reagents	1222	0.031	0.005	0.003	0.008			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.521	0.083	0.051	0.134			0.127	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.561	0.054	0.055	0.109			0.016	
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.60	0.098	5
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.058	0.010	0.006	0.016			0.099	
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.092	0.015	0.009	0.025			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.472	0.050	0.046	0.096			0.525	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.327	0.043	0.032	0.075			0.262	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.342	0.059	0.034	0.092			0.168	
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	460	0.15	0.098	309
				Additives & Reagents	1222	0.003	0.004	.000	0.004			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.056	0.062	0.005	0.068			0.099	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	100	0.17	0.033	45
				Additives & Reagents	1222	0.005	0.001	0.001	0.001			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.090	0.012	0.009	0.021			0.034	
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	100	0.07	0.033	45
				Additives & Reagents	1222	0.012	0.002	0.001	0.003			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.210	0.029	0.021	0.050			0.034	
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	110	0.16	0.017	43
				Additives & Reagents	1222	0.006	0.001	0.001	0.001			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.105	0.015	0.010	0.025			0.017	
										TOTAL INDEX		1.506	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm.
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 20: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE I (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.630	0.104	0.064	0.167	400	0.08	0.125	123
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.671	0.110	0.068	0.178			0.127	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.561	0.054	0.055	0.109			0.016	
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.058	0.010	0.006	0.016			0.099	
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.092	0.016	0.009	0.025			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.005	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.472	0.050	0.046	0.096			0.525	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	60
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.327	0.043	0.032	0.075			0.262	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	14322	0.342	0.059	0.034	0.092			0.168	
										TOTAL INDEX		1.197	

Notes: 1. Based upon the receipt of 130,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.19%, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 21: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.086	0.009	0.008	0.017			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000	0
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.109	0.019	0.011	0.029			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000	0
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.150	0.021	0.015	0.035			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000	
											TOTAL INDEX	0.000	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited. 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

CWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY CWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1025	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0.00	0.000	0
				Additives & Reagents	5	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	1217	0.004	0.001	.000	0.001			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.071	0.010	0.007	0.017			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.271	0.038	0.027	0.064			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.102	128
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.456	0.063	0.045	0.108			0.103	
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.140	0.025	0.015	0.040	250	0.19	0.077	77
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			.000	
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.003	
				TOTAL	27592	0.209	0.036	0.020	0.056			0.080	
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	320	0.23	0.005	35
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.003	
				TOTAL	7828	0.064	0.011	0.006	0.017			0.008	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	715	0.51	0.018	32
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.012	
				TOTAL	7828	0.172	0.011	0.017	0.028			0.031	

CWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI 13N/LF-4W CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	CWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY CWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	200	0.15	0.000	32
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.005	
				TOTAL	6824	0.246	0.009	0.024	0.033			0.005	
5. First Line E. to LF-4W	2.2	8.1	17.92	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.009	
				TOTAL	6824	0.545	0.015	0.053	0.068			0.009	
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	400	0.40	0.133	36
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.001	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.005	
				TOTAL	27592	0.199	0.028	0.020	0.047			0.139	
										TOTAL INDEX		0.534	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196. applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index." is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.8	0.90	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0.00	0.000	0
				Additives & Reagents	1217	0.004	0.001	.000	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.071	0.020	0.007	0.027			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	1217	0.004	0.001	.000	0.001			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.071	0.010	0.007	0.017			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.271	0.038	0.027	0.064			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	129
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.456	0.063	0.045	0.108			0.183	
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.025	0.015	0.041	320	0.23	0.093	35
				Additives & Reagents	1217	0.010	0.002	0.001	0.003			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.161	0.028	0.016	0.043			0.094	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	715	0.51	0.336	32
				Additives & Reagents	1217	0.027	0.002	0.003	0.004			0.002	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.434	0.028	0.043	0.070			0.339	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.009	
				TOTAL	6824	0.545	0.015	0.053	0.068			0.009	

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 33: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-1N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	100	0.10	0.000	23
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.001	
				TOTAL	6824	0.049	0.007	0.005	0.012			0.001	
										TOTAL INDEX		0.705	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm.
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 24: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	
											TOTAL INDEX	0.000	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196. applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PARTIAL SOLIDIFICATION

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	0	0.00	0.000
				Additives & Reagents	1222	0.031	0.005	0.003	0.008			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.521	0.083	0.051	0.134			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			0.009
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			0.930
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			0.000
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			0.102
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			0.058
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			0.000
C. REGIONAL ROAD 65												
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0.00	0.000
				Additives & Reagents	1222	0.003	0.004	.000	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.056	0.062	0.005	0.068			0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD P(S) DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC. MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. FRICK ROAD (LOCAL)												
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0.00	0.000
				Additives & Reagents	1222	0.005	0.001	0.001	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.090	0.012	0.009	0.021			0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.117	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0.00	0.000
				Additives & Reagents	1222	0.012	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.210	0.029	0.021	0.050			0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0.00	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.105	0.015	0.010	0.025			0.000
											TOTAL INDEX	1.121

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 26: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC - LF-9C CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	1222	0.041	0.006	0.004	0.010			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.691	0.110	0.068	0.178			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	1222	0.048	0.005	0.005	0.009			0.009
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.561	0.054	0.055	0.109			0.930
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	1222	0.005	0.001	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.058	0.010	0.006	0.016			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	1222	0.008	0.001	0.001	0.002			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.092	0.016	0.009	0.025			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	1222	0.040	0.004	0.004	0.008			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.472	0.050	0.046	0.096			0.102
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	1222	0.028	0.004	0.003	0.006			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.327	0.043	0.032	0.075			0.058
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	1222	0.029	0.005	0.003	0.008			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	14322	0.342	0.059	0.034	0.092			0.000
										TOTAL INDEX		1.121

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 27: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-1E CASE 1 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.086	0.008	0.008	0.017			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.109	0.019	0.011	0.029			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.150	0.021	0.015	0.035			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	1222	0.007	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.120	0.017	0.012	0.028			0.000
											TOTAL INDEX	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 20: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
B. HIGHWAY 25												
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1000	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.00	Special Wastes	999	0.004	0.001	.000	0.001	100	0.10	0.001
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.001
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000
D. BRITANNIA ROAD												
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0.00	0.000
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.000
				Inter-Site Transfers	6024	0.052	0.009	0.005	0.014			0.000
				TOTAL	27592	0.209	0.036	0.020	0.056			0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	6024	0.056	0.010	0.005	0.015			0.000
				TOTAL	7028	0.064	0.011	0.006	0.017			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	250	0.18	0.006
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	6024	0.150	0.010	0.015	0.024			0.004
				TOTAL	7028	0.172	0.011	0.017	0.028			0.011

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-13N/LF-4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC. MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m) (6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000
F. FIFTH LINE (LOCAL)												
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000
				TOTAL	27592	0.199	0.028	0.020	0.047			0.000
											TOTAL INDEX	0.031

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 29: LOCAL AND REGIONAL ACCESS ROAD FIXED DATA FOR SPILL INTO SENSITIVE HYDROGEOLOGIC LANDS PI-1N/LF 4N CASE 2 (1)

LINE DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINE LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. HIGHWAY 25												
1. OEW to Hwy. 5	4	0.8	3.20	Special Wastes	995	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1000	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.00	Special Wastes	18547	0.066	0.019	0.007	0.025	100	0.10	0.025
				Additives & Reagents	1217	0.004	0.001	.000	0.002			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.071	0.020	0.007	0.027			0.025
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000
D. BRITANNIA ROAD												
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0.00	0.000
				Additives & Reagents	1217	0.010	0.002	0.001	0.003			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.161	0.028	0.016	0.043			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	250	0.18	0.118
				Additives & Reagents	1217	0.027	0.002	0.003	0.004			0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.434	0.028	0.043	0.070			0.119
5. First Line E. to LF 4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6224	0.545	0.015	0.053	0.068			0.002
				TOTAL	6224	0.545	0.015	0.053	0.068			0.000

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI IN'LF 4N CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1990 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
E. FIRST LINE EAST (LOCAL)												
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000
											TOTAL INDEX	0.167

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 30: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-27E/LF-1E CASE 2 (1)

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. GEN to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.000	0.016	0	0.00	0.000
				Additives & Reagents	1222	0.005	.000	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.086	0.000	0.000	0.017			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	1222	0.006	0.001	0.001	0.002			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	20774	0.097	0.017	0.009	0.026			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000
											TOTAL INDEX	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION
TABLE 31
FACTOR/INDICATOR VALUES FOR EACH SITING OPTION USING PARTIAL SOLIDIFICATION WITHOUT RAIL

Factor	Indicator	Values at Each Siting Option					
		LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N	PI-27E/ LF-1E
1. Province-wide Hazard Based Spill Index	a) Spills Index due to motor vehicle accidents	3.177	3.177	5.362	1.954	1.954	5.362
	b) Spills Index due to non-motor vehicle accidents	10.277	10.277	15.361	10.416	10.416	15.361
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	10989.4	13382.8	26.4	1173.8	981.8	16.7
	b) Road User Risk Index	50.77	56.50	1.72	11.85	8.54	1.18
	c) Sensitive Uses Risk Index	12.12	24.83	0	0	0	0
	d) Surface Water Suitability Risk Index	1.197 4	1.506 5	0 1	0.705 3	0.534 3	0 1
	e) Sensitive Hydrogeologic Lands Risk Index	1.121	1.121	0	0.163	0.031	0
3. Province-wide Accident Involvements	a) Annual Accident Involvements by OWMC generated trucks	3.85	3.85	6.23	2.32	2.32	6.23
4. Risks due to Accident Involvements on Local and Regional Access Roads	a) Road User Risks	24.52	26.70	0.79	5.28	4.46	0.64

OWMC PHASE 4A - TRANSPORTATION

TABLE 32

FACTOR/INDICATOR VALUES FOR EACH SITING OPTION
USING PARTIAL SOLIDIFICATION WITHOUT RAIL

			Scaled Value (and Scaled Value x Indicator Weighting) for Each Siting Option						
Factor	Indicator	Weight	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N	PI-27E/ LF-1E	Maximum Base Case
1. Province-wide Hazard Based Spill Index	a) Spill Index due to motor vehicle accidents	1	3.177	3.177	5.362	1.954	1.954	5.362	
	b) Spill Index due to non-motor vehicle accidents	1	10.277	10.277	15.361	10.416	10.416	15.361	
	Aggregated Factor Score:		13.454	13.454	20.723	12.370	12.370	20.723	21.012
	Factor Suitability Level:		-3.20	-3.20	-4.93	-2.94	-2.94	-4.93	
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	5	0.81(4.07)	0.99(4.95)	0.002(0.01)	0.09(0.43)	0.07(0.36)	0.001(0.01)	13512.9
	b) Road User Risk Index	4	0.89(3.56)	0.99(3.96)	0.03 (0.12)	0.21(0.83)	0.15(0.60)	0.02(0.08)	57.06
	c) Sensitive Uses Risk Index	3	0.48(1.45)	0.99(2.97)	0	0	0	0	25.05
	d) Surface Water Suitability Risk Index	2	0.80(1.60)	1.00(2.00)	0.20 (0.40)	0.60(1.20)	0.60(1.20)	0.20(0.40)	5
	e) Sensitive Hydrogeologic Lands Risk Index	1	0.99(0.99)	0.99(0.99)	0	0.14(0.14)	0.03(0.03)	0	1.133
	Aggregated Factor Score:		11.67	14.87	0.53	2.60	2.19	0.49	15.00
	Factor Suitability Level:		-3.89	-4.96	-0.18	-0.87	-0.73	-0.16	
3. Province-wide Accident Involvements	a) Annual Number of Accident Involvements by OWMC generated trucks	1	0.56(0.56)	0.56(0.56)	0.90 (0.90)	0.34(0.34)	0.34(0.34)	0.90(0.90)	6.92
	Factor Suitability Level:		-2.78	-2.78	-4.50	-1.68	-1.68	-4.50	
4. Risks due to Accident Involvements on Local and Regional Roads	a) Road User Risks	1	0.84(0.84)	0.92(0.92)	0.03 (0.03)	0.18(0.18)	0.15(0.15)	0.02(0.02)	29.18
	Factor Suitability Level:		-4.20	-4.58	-0.14	-0.90	-0.76	-0.10	

OWMC PHASE 4A - TRANSPORTATION

TABLE 33

AGGREGATION OF TRANSPORTATION RISK FACTORS USING PARTIAL SOLIDIFICATION WITHOUT RAIL

		Factor Suitability (and Suitability x Weight) for each Siting Option					
Factor	Weight	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N	PI-27E/ LF-1E
1. Province-wide Hazard Based Spill Index	8	-3.20 (-25.6)	-3.20 (-25.6)	-4.93 (-39.4)	-2.94 (-23.5)	-2.94 (-23.5)	-4.93 (-39.4)
2. Spill Risks on Local and Regional Roads	10	-3.89 (-38.9)	-4.96 (-49.6)	-0.18 (-1.8)	-0.87 (-8.7)	-0.73 (-7.3)	-0.16 (-1.6)
Aggregated Value for Spill Factors:		-64.5	-75.2	-41.2	-32.2	-30.8	-41.0
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd
3. Province-wide Accident Involvements	8	-2.78 (-22.2)	-2.78 (-22.2)	-4.50 (-36.0)	-1.68 (-13.4)	-1.68 (-13.4)	-4.50 (-36.0)
4. Accident Involvement Risks on Local and Regional Roads	10	-4.20 (-42.0)	-4.58 (-45.8)	-0.14 (-1.4)	-0.90 (-9.0)	-0.76 (-7.6)	-0.10 (-1.0)
Aggregated Value for Accident Involvement Factors:		-64.2	-68.0	-37.4	-22.4	-21.0	-37.0
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd
Aggregated Value for all Factors:		-128.7	-143.2	-78.6	-54.6	-51.8	-78.0
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd

OWMC PHASE 4A - TRANSPORTATION

TABLE 34

RANKING OF SITES: BASE CASE AND PARTIAL SOLIDIFICATION WITHOUT RAIL

Rank	Siting Option	Aggregated Factor Value	Aggregated Factor Suitability Level
1st	PI-13N/LF-4N - partial	51.8	-1.70
2nd	PI-1N/LF-4N - partial	54.6	-1.80
3rd	PI-13N/LF-4N	55.4	-1.82
4th	PI-1N/LF-4N	58.4	-1.92
5th	PI-27E/LF-1E - partial	78.0	-2.57
6th	LF-1E - partial	78.6	-2.58
7th	PI-27E/LF-1E	84.0	-2.76
7th	LF-1E	84.0	-2.76
9th	LF-9C - partial	128.7	-4.23
10th	LF-9C	137.0	-4.51
11th	LF-3C - partial	143.2	-4.71
12th	LF-3C	152	-5.00

APPENDIX P

DATA FOR SENSITIVITY ANALYSIS USING PARTIAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Local and Regional Access Road Spill Risk Indices for Facillity Site Options Used During Detailed Comparative Evaluation

- Road User Risk Indices - Table 1 - 6 (pp. P-3 to P-13)
  - Accident Involvement Risk Index
  - Total Spill Risk Index
- Residents (Population) Risk Index - Tables 7-12 (pp. P-15 to P-25)
- Sensitive Community and Recreational Features Risk Index - Tables 13-18 (pp. P-27 to P-37)
- Surface Water Spill Pathway Risk Index - Tables 19-24 (pp. P-39 to P-48)
- Sensitive Hydrogeologic Lands Risk Index - Tables 25-30 (pp. P-49 to P-58)

Two-Way Annual Accident Involvement for the Total Access Road System - Table 31 (pp. P-59 to P-60)

Annual Number of Spills for the Total Access Road System - Table 32 (p. P-61)

Factor and Indicator Values for Each Siting Option - Table 33 (p. P-62)

Scaled Factor and Indicator Values for Each Siting Option - Table 34 (p. P-63)

Aggregation of Transportation Risk Factors - Table 35 (p. P-64)

Ranking of Sites - Table 36 (p. P-65)

LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - PARTIAL SOLIDIFICATION

- Accident Involvement Risk Index
- Total Spill Risk Index

OWMC PHASE 4A - TRANSPORTATION

CENARIO 2. PARTIAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA LF-9C CASE (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	35	0.001	.000	.000	.000		4.665	1.201	5.867
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168		2610.924	6710.721	9321.645
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	4010	1966.988	5063.789	7030.776
				Additives & Reagents	35	0.001	.000	.000	.000		3.521	0.906	4.429
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127		1970.509	5064.695	7035.204
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	35	0.001	.000	.000	.000		19.625	3.828	23.452
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100		7364.827	14330.622	21695.449
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	35	.000	.000	.000	.000		2.313	0.624	2.937
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014		868.026	2335.479	3203.505
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	35	.000	.000	.000	.000		3.635	0.980	4.615
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023		1364.040	3670.039	5034.079
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	35	0.001	.000	.000	.000		14.337	2.929	17.266
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.432	0.046	0.042	0.088		5380.415	10965.426	16345.841
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	35	0.001	.000	.000	.000		7.038	1.614	8.652
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069		2641.255	6041.939	8683.194
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	35	0.001	.000	.000	.000		6.218	1.677	7.895
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085		2333.502	6278.440	8611.942
C. REGIONAL ROAD 65													
1. Hwy.20 to Frick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	840	44.147	535.974	580.121
				Additives & Reagents	35	.000	.000	.000	.000		0.079	0.096	0.175
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.053	0.059	0.005	0.064		44.226	536.070	580.296

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 1: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
D. FRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	65	5.500	13.015	18.515
				Additives & Reagents	35	.000	.000	.000	.000		0.010	0.002	0.012
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.085	0.012	0.008	0.020		5.510	13.018	18.527
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	50	5.641	13.349	18.990
				Additives & Reagents	35	.000	.000	.000	.000		0.010	0.002	0.012
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027		5.651	13.351	19.002
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	95	18.756	44.385	63.142
				Additives & Reagents	35	.000	.000	.000	.000		0.034	0.008	0.042
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047		18.790	44.393	63.183
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	98	9.674	22.893	32.568
				Additives & Reagents	35	.000	.000	.000	.000		0.017	0.004	0.021
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023		9.692	22.898	32.589

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDICES: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.300	0.521	0.331	0.852	521142			
				Additives & Reagents	35	0.000	0.001	0.001	0.002	39104	24617.366	56027.091	80644.456
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	19587	3.300	0.522	0.332	0.854	560246			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 27 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T.".
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 2: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA (LF-9C CASE 1) (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	4010	2606.258	6709.520	9315.778
				Additives & Reagents	35	0.001	.000	.000	.000		4.665	1.201	5.967
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168		2610.924	6710.721	9321.645
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	14320	7345.202	14326.794	21671.997
				Additives & Reagents	35	0.001	.000	.000	.000		19.625	3.828	23.452
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100		7364.827	14330.622	21695.449
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	16210	865.713	2334.855	3200.568
				Additives & Reagents	35	.000	.000	.000	.000		2.313	0.624	2.937
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014		868.026	2335.479	3203.505
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.004	0.014	0.008	0.023	16210	1360.405	3669.058	5029.464
				Additives & Reagents	35	.000	.000	.000	.000		3.635	0.980	4.615
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.004	0.014	0.008	0.023		1364.040	3670.039	5034.079
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	12440	5366.079	10962.497	16328.576
				Additives & Reagents	35	0.001	.000	.000	.000		14.337	2.929	17.266
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088		5380.415	10965.426	16345.841
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	8801	2634.217	6040.325	8674.542
				Additives & Reagents	35	0.001	.000	.000	.000		7.038	1.614	8.652
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069		2641.255	6041.939	8683.194
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	7440	2327.284	6276.763	8604.047
				Additives & Reagents	35	0.001	.000	.000	.000		6.218	1.677	7.895
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085		2333.502	6278.440	8611.942

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.20	Special Wastes	19552	2.344	0.316	0.230	0.546	315846			
				Additives & Reagents	35	0.005	0.001	0.001	0.001	26273	22562.989	50332.666	72895.654
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	19587	2.349	0.317	0.230	0.547	342119			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm.
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 3: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9)		
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. OEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	35	.000	.000	.000	.000		0.671	0.131	0.802
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016		375.393	731.026	1106.420
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.864	417.674	572.539
				Additives & Reagents	35	.000	.000	.000	.000		0.277	0.075	0.352
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025		155.142	417.749	572.891
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.010	0.010	0.020	1700	174.222	469.884	644.106
				Additives & Reagents	35	.000	.000	.000	.000		0.312	0.084	0.396
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.103	0.010	0.010	0.020		174.534	469.968	644.502
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	50	7.051	16.686	23.737
				Additives & Reagents	35	.000	.000	.000	.000		0.013	0.003	0.016
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033		7.064	16.689	23.753
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	260	29.333	69.415	98.748
				Additives & Reagents	35	.000	.000	.000	.000		0.053	0.012	0.065
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027		29.306	69.427	98.813

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: A.A.D.T.		
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		TOTAL ACCIDENT INVOLVEMENT INDEX	TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	76253			
				Additives & Reagents	35	0.001	.000	.000	.000	4766	741.519	1704.859	2446.3780
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	0			
				TOTAL	19587	0.529	0.076	0.052	0.128	81019			

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	10100	36.162	136.338	172.500
				Additives & Reagents	5	.000	.000	.000	.000		0.181	0.068	0.249
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001		36.343	136.406	172.749
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	1217	0.004	0.001	.000	0.001		96.602	22.860	119.462
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017		1568.804	3506.716	5075.520
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	1217	0.017	0.002	0.002	0.004		24.017	5.683	29.700
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064		390.027	871.820	1261.847
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	1217	0.028	0.004	0.003	0.007		38.202	9.040	47.242
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108		620.394	1386.754	2007.148
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	1840	272.295	734.390	1006.685
				Additives & Reagents	1222	0.009	0.002	0.001	0.002		17.024	4.591	21.615
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014		95.065	25.639	120.705
				TOTAL	27592	0.209	0.036	0.020	0.056		384.384	764.621	1149.005
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	1840	14.988	40.422	55.410
				Additives & Reagents	5	.000	.000	.000	.000		0.075	0.020	0.095
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015		102.378	27.612	129.990
				TOTAL	7828	0.064	0.011	0.006	0.017		117.441	68.054	185.495
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	1840	40.351	65.279	105.630
				Additives & Reagents	5	.000	.000	.000	.000		0.202	0.033	0.235
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024		275.633	44.591	320.223
				TOTAL	7828	0.172	0.011	0.017	0.028		316.186	109.902	426.088

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 4: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-13N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	470	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033		115.811	15.519	131.330
				TOTAL	6824	0.246	0.009	0.024	0.033		115.811	15.519	131.330
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
				TOTAL	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
F. FIFTH LINE (LOCAL) 1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	390	54.983	130.112	185.095
				Additives & Reagents	1222	0.009	0.001	0.001	0.002		3.437	0.813	4.251
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012		19.196	4.543	23.738
				TOTAL	27592	0.199	0.028	0.020	0.047		77.616	135.468	213.085

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	163005	4460.954	8544.237	13005.191
				Additives & Reagents	1222	0.068	0.010	0.007	0.016	9697			
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166	50606			
				TOTAL	27592	2.274	0.231	0.223	0.454	231300			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T.. .
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) TOTAL SPILL INDEX	TOTAL INDEX
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	11500	164.699	620.945	785.644
				Additives & Reagents	5	.000	.000	.000	.000		0.824	0.311	1.135
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005		165.523	621.256	786.779
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	10100	231.438	872.563	1104.001
				Additives & Reagents	5	.000	.000	.000	.000		1.158	0.437	1.595
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009		232.596	873.000	1105.596
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	10100	671.372	2531.191	3202.563
				Additives & Reagents	30	.000	.000	.000	.000		1.086	0.409	1.495
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.067	0.019	0.007	0.025		672.458	2531.601	3204.058
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	22010	1472.203	3483.856	4956.059
				Additives & Reagents	30	.000	.000	.000	.000		2.381	0.564	2.945
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.067	0.009	0.007	0.016		1474.584	3484.420	4959.004
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	1440	366.011	866.136	1232.147
				Additives & Reagents	30	.000	.000	.000	.000		0.592	0.140	0.732
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.255	0.035	0.025	0.060		366.603	866.276	1232.879
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	1360	582.192	1377.714	1959.906
				Additives & Reagents	30	0.001	.000	.000	.000		0.942	0.223	1.165
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.429	0.059	0.042	0.101		583.134	1377.937	1961.071
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	1040	278.254	750.459	1028.713
				Additives & Reagents	30	.000	.000	.000	.000		0.450	0.121	0.571
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.151	0.026	0.015	0.041		278.704	750.581	1029.284
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	1840	749.144	1211.932	1961.077
				Additives & Reagents	30	0.001	.000	.000	.000		1.212	0.196	1.408
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	18577	0.408	0.026	0.040	0.066		750.356	1212.128	1962.485
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	800	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549
				TOTAL	6824	0.545	0.015	0.053	0.068		435.828	54.721	490.549

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 5: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9) ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: TOTAL SPILL INDEX	TOTAL INDEX
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	1960	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012		52.173	12.346	64.520
				TOTAL	6824	0.049	0.007	0.005	0.012		52.173	12.346	64.520

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDICES: A.A.D.T. TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	184731	5011.959	11784.266	16796.224
				Additives & Reagents	35	0.002	.000	.000	0.001	11492			
				Inter-Site Transfers	6824	0.594	0.022	0.058	0.080	21837			
				TOTAL	26405	2.008	0.207	0.197	0.404	218060			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
3. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 6: LOCAL AND REGIONAL ACCESS ROAD USER RISK LINK DATA - PI-27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	YEAR 2000 A.A.D.T. (veh.)	RECEPTOR INDICES: A.A.D.T. (6,7,8,9): ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDICES: A.A.D.T. (6,7,8,9): TOTAL SPILL INDEX	TOTAL INDEX
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. GEN to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	4650	374.723	730.895	1105.618
				Additives & Reagents	35	.000	.000	.000	.000		0.671	0.131	0.802
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.081	0.008	0.000	0.016		375.393	731.026	1106.420
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	1700	154.064	417.674	572.539
				Additives & Reagents	35	.000	.000	.000	.000		0.277	0.075	0.352
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025		155.142	417.749	572.891
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	1700	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010		60.807	16.400	77.207
				TOTAL	6824	0.036	0.006	0.004	0.010		60.807	16.400	77.207
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	50	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012		2.461	0.582	3.043
				TOTAL	6824	0.049	0.007	0.005	0.012		2.461	0.582	3.043
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	260	0.000	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000		0.000	0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009		10.230	2.423	12.660
				TOTAL	6824	0.039	0.005	0.004	0.009		10.238	2.423	12.660

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: A.A.D.T.: TOTAL ACCIDENT INVOLVEMENT INDEX	RECEPTOR INDEX: A.A.D.T.: TOTAL SPILL INDEX	TOTAL INDEX
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	23462	604.041	1168.180	1772.221
				Additives & Reagents	35	.000	.000	.000	.000	1466			
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	10425			
				TOTAL	26411	0.296	0.042	0.029	0.071	43354			

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Accident Involvement Index is the product of the "Two-Way OWMC Annual Accident Involvement " and the "Year 2000 A.A.D.T..
7. The Total Spill Index is the product of the "Total Annual Number of Spills" , the Year 2000 A.A.D.T. and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives & Reagents and Inter-site Transfers.
9. The "Receptor Indices" and link totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS (POPULATION) USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - PARTIAL SOLIDIFICATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	35	0.001	.000	.000	.000			0.022	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			123.839	28.449
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	147	0	185.630	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.033	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127			185.663	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. OEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	35	0.001	.000	.000	.000			0.207	0.157
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			774.574	589.437
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.182	18.005
				Additives & Reagents	35	.000	.000	.000	.000			0.006	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			22.188	18.010
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.004	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	35	.000	.000	.000	.000			0.001	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.004	0.014	0.008	0.023			4.302	0.679
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	35	0.001	.000	.000	.000			0.012	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			44.955	19.392
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	35	0.001	.000	.000	.000			0.004	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			13.730	17.849
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	35	0.001	.000	.000	.000			0.010	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			37.131	13.502
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	77	7	49.131	4.466
				Additives & Reagents	35	.000	.000	.000	.000			0.009	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.053	0.059	0.005	0.064			49.140	4.467

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 7: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	4	0.000	0.001
				Additives & Reagents	35	.000	.000	.000	.000			0.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.085	0.012	0.008	0.020			0.000	0.001
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	7	0.000	1.869
				Additives & Reagents	35	.000	.000	.000	.000			0.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.300	1.869
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	4	11	1.869	5.139
				Additives & Reagents	35	.000	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			1.869	5.140
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.600	0.000			0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		48.12	Special Wastes	19552	3.380	0.521	0.331	0.852	TOTAL	1257.390	699.596
				Additives & Reagents	35	0.000	0.001	0.001	0.002	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	3.380	0.522	0.332	0.854	TOTAL	12573.901	699.596
										SUM OF WEIGHTED TOTALS		13273.497

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 8: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			NO. OF RESIDENTS		RECEPTOR INDEX: RESIDENTS	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m)	150 - 500 (m)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	74	17	123.817	28.444
				Additives & Reagents	35	0.001	.000	.000	.000			0.022	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			123.839	28.449
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	774	589	774.367	589.279
				Additives & Reagents	35	0.001	.000	.000	.000			0.207	0.157
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			774.574	589.437
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	154	125	22.102	18.005
				Additives & Reagents	35	.000	.000	.000	.000			0.006	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			22.108	18.010
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	19	3	4.301	0.679
				Additives & Reagents	35	.000	.000	.000	.000			0.001	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			4.302	0.679
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	51	22	44.943	19.387
				Additives & Reagents	35	0.001	.000	.000	.000			0.012	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			44.955	19.392
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	20	26	13.726	17.844
				Additives & Reagents	35	0.001	.000	.000	.000			0.004	0.005
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			13.730	17.849
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	44	16	37.121	13.498
				Additives & Reagents	35	0.001	.000	.000	.000			0.010	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			37.131	13.502

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1020.718	687.319
				Additives & Reagents	35	0.006	0.001	0.001	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	2.349	0.317	0.230	0.547	TOTAL	10207.177	687.319

SUM OF WEIGHTED TOTALS	10894.496

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 9: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			NO. OF RESIDENTS		RECEPTOR INDEX: RESIDENTS	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m)	150 - 500 (m)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	35	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			1.474	1.474
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	3	0	1.001	0.000
				Additives & Reagents	35	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			1.001	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: RESIDENTS	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	2.476	1.474
				Additives & Reagents	35	0.001	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	0.529	0.076	0.052	0.128	TOTAL	24.758	1.474

SUM OF WEIGHTED TOTALS 26.232

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	160	85	13.823	7.343
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.004
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.830	7.347
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	3	0	0.040	0.000
				Additives & Reagents	5	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.041	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.051	0.024
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			7.871	3.633
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.339	0.020
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			52.003	3.059
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	19	3	7.583	1.197
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.047	0.007
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.265	0.042
				TOTAL	27592	0.209	0.036	0.020	0.056			7.896	1.247
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	30	10	0.835	0.220
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.570	0.150
				TOTAL	7828	0.064	0.011	0.006	0.017			1.405	0.370
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	26	3	0.922	0.106
				Additives & Reagents	5	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.630	0.073
				TOTAL	7828	0.172	0.011	0.017	0.028			1.553	0.179

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			NO. OF RESIDENTS		RECEPTOR INDEX: RESIDENTS	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m)	150 - 500 (m)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	3	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000	0.099
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000	0.099
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.684
F. FIFTH LINE (LOCAL)				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.684
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	3	0.000	30.033
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	3.002
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	3.012
				TOTAL	27592	0.199	0.020	0.020	0.047			0.000	36.047

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: RESIDENTS	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m)	150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272	TOTAL	92.809	53.691
				Additives & Reagents	1222	0.068	0.010	0.007	0.016	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166	CORRIDOR WEIGHTED TOTAL	928.094	53.691
				TOTAL	27592	2.274	0.231	0.223	0.454			

SUM OF WEIGHTED TOTALS 981.785

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSFORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	152	19	8.207	1.026
				Additives & Reagents	5	.000	.000	.000	.000			0.004	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			8.211	1.026
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	157	79	13.564	6.825
				Additives & Reagents	5	.000	.000	.000	.000			0.007	0.003
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			13.570	6.828
3. PI-1N to Britannia Rd.	1	0.0	0.00	Special Wastes	18547	0.066	0.019	0.007	0.025	3	0	0.752	0.000
				Additives & Reagents	30	.000	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.752	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	13	6	7.819	3.609
				Additives & Reagents	30	.006	.000	.000	.000			0.001	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			7.821	3.609
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	51	3	51.664	3.039
				Additives & Reagents	30	0.001	.000	.000	.000			0.008	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			51.673	3.040
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	38	10	15.499	4.079
				Additives & Reagents	30	.000	.000	.000	.000			0.003	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			15.501	4.079
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	26	3	17.125	1.976
				Additives & Reagents	30	0.001	.000	.000	.000			0.003	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.408	0.026	0.040	0.066			17.128	1.976
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	10	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.684
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.684

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 11: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-1N/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	114.656	21.243
				Additives & Reagents	35	0.002	.000	.000	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.594	0.022	0.058	0.080	CORRIDOR WEIGHTED		
				TOTAL	26405	2.000	0.207	0.197	0.404	TOTAL	1146.559	21.243

SUM OF WEIGHTED TOTALS	1167.803

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 12: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR NUMBER OF RESIDENTS - PI-27E/LF-1E CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL	NO. OF RESIDENTS 0 - 150 (m)	NO. OF RESIDENTS 150 - 500 (m)	RECEPTOR INDEX: RESIDENTS 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	6	6	1.474	1.474
				Additives & Reagents	35	.000	.000	.000	.000			.000	.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			1.474	1.474
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	3	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.035	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.035	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Norris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS: NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS: ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS: TOTAL		RECEPTOR INDEX: RESIDENTS 0 - 150 (m)	RECEPTOR INDEX: RESIDENTS 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	1.509	1.474
				Additives & Reagents	35	.000	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	CORRIDOR WEIGHTED		
				TOTAL	26411	0.296	0.042	0.029	0.071	TOTAL	15.094	1.474
										SUM OF WEIGHTED TOTALS		16.568

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Residents" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - PARTIAL SOLIDIFICATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - LF-9C CASE 1 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000	0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	1	0	1.263	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.491	0.078	0.048	0.127			1.263	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			1.001	2.001
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000	0.000
C. REGIONAL ROAD 65													
1. Hwy.20 to Frick Rd.	3	0.2	0.60	Special Wastes	19552	0.053	0.059	0.005	0.064	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.053	0.059	0.005	0.064			0.000	0.000

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 13: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS			COMM. & REC. FEATURES		RECEPTOR INDEX: COMM. & REC. FEATURES	
		1980-1982 ACC./MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL	0 - 150 (m) (9)	150 - 500 (m) (9)	0 - 150 (m) (6,7,8)	150 - 500 (m) (6,7,8)
D. KRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.085	0.012	0.000	0.020			0.000	0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			0.000	0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS				RECEPTOR INDEX: COMM. & REC. FEATURES	
							NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL		0 - 150 (m) (9)	150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-3C CASE 1	32		40.12	Special Wastes	19552	3.300	0.521	0.331	0.852	TOTAL	2.264	2.001
				Additives & Reagents	35	0.008	0.001	0.001	0.002	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	3.308	0.522	0.332	0.854	TOTAL	22.638	2.001

SUM OF WEIGHTED TOTALS	24.639

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 14: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000	0.000
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	1	2	1.000	2.001
				Additives & Reagents	35	0.001	.000	.000	.000			.000	0.001
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			1.001	2.001
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000	0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	0.000
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.000	0.000
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.000	0.000
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-9C CASE 1	21.5		36.28	Special Wastes	19552	2.344	0.316	0.230	0.546	TOTAL	1.001	2.001
				Additives & Reagents	35	0.006	0.001	0.001	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	2.349	0.317	0.230	0.547	TOTAL	10.007	2.001

SUM OF WEIGHTED TOTALS	12.009

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 15: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.102	0.018	0.010	0.028			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION LF-1E CASE 1	3.9		6.03	Special Wastes	19552	0.528	0.076	0.052	0.128	TOTAL	0.000	0.000
				Additives & Reagents	35	0.001	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000	CORRIDOR WEIGHTED		
				TOTAL	19587	0.529	0.076	0.052	0.128	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS 0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index"
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000	0.000
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0	0.000	0.000
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.000	0.000
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.000	0.000
				TOTAL	27592	0.209	0.036	0.020	0.056			0.000	0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.000	0.000
				TOTAL	7828	0.064	0.011	0.006	0.017			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	6824	0.152	0.010	0.015	0.024			0.000	0.000
				TOTAL	7828	0.175	0.011	0.017	0.028			0.000	0.000

OWMC PHASE 4B TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 16: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - PI-13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000	0.000
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.000
F. FIFTH LINE (LOCAL)				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.000
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0	0.000	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	27592	0.199	0.028	0.020	0.047			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL
ACCESS ROUTE TOTALS FOR SITE OPTION PI-13N/LF-4N CASE 2	25.6		54.04	Special Wastes	19546	1.109	0.163	0.109	0.272
				Additives & Reagents	1222	0.068	0.010	0.007	0.016
				Inter-Site Transfers	6824	1.098	0.059	0.108	0.166
				TOTAL	27592	2.274	0.231	0.223	0.454

	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
TOTAL	0.000	0.000
CORRIDOR WEIGHT	10.000	1.000
CORRIDOR WEIGHTED TOTAL	0.000	0.000
SUM OF WEIGHTED TOTALS		0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - PI-IN/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.000	0.000
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0	0.000	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000	0.000
3. PI-IN to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.000	0.000
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000	0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			0.000	0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0	0.000	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			0.000	0.000
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0	0.000	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			0.000	0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	0	0	0.000	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	18577	0.408	0.026	0.040	0.066			0.000	0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000	0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000	0.000

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - PI-IN/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
E. FIRST LINE EAST (LOCAL)													
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.002	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6024	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6024	0.049	0.007	0.005	0.012			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (9)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-IN/LF-4N CASE 2	23		44.29	Special Wastes	19546	1.411	0.185	0.138	0.323	TOTAL	0.000	0.000
				Additives & Reagents	35	0.002	.000	.000	0.001	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6024	0.594	0.022	0.058	0.080	CORRIDOR WEIGHTED		
				TOTAL	26405	2.000	0.207	0.197	0.404	TOTAL	0.000	0.000

SUM OF WEIGHTED TOTALS	0.000

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm.
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 10: LOCAL AND REGIONAL ACCESS ROAD RISK LINK DATA FOR COMMUNITY AND RECREATIONAL FEATURES - PI-27E/LF-1E CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	COMM. & REC. FEATURES 0 - 150 (m) (9)	COMM. & REC. FEATURES 150 - 500 (m) (9)	RECEPTOR INDEX: COMM. & REC. FEATURES 0 - 150 (m) (6,7,8)	RECEPTOR INDEX: COMM. & REC. FEATURES 150 - 500 (m) (6,7,8)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	9.081	0.008	0.008	0.016			0.000	0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000	0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	0.000
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	0.000
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	0.000
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0	0.000	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	0.000

SUMMARY TABLE	LENGTH (km)		ACCIDENTS PER MV.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE REQUIREMENTS	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL		RECEPTOR INDEX: RESIDENCES 0 - 150 (m)	RECEPTOR INDEX: RESIDENCES 150 - 500 (m)
ACCESS ROUTE TOTALS FOR SITE OPTION PI-27E/LF-1E CASE 2	3.9		6.03	Special Wastes	19552	0.172	0.023	0.017	0.040	TOTAL	0.000	0.000
				Additives & Reagents	35	.000	.000	.000	.000	CORRIDOR WEIGHT	10.000	1.000
				Inter-Site Transfers	6824	0.124	0.018	0.012	0.031	CORRIDOR WEIGHTED		
				TOTAL	26411	0.296	0.042	0.029	0.071	TOTAL	0.000	0.000

: SUM OF WEIGHTED TOTALS 0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. The Hazard Indicies for the transported materials are, 10 for Special Waste and 1 for Inter-site Transfers and Additives & Reagents.
7. Receptor Indices are the product of "Total Number of Spills", the "Number of Community & Recreational Features" and the "Hazard Index".
8. The "Receptor Indices" and Link Totals have been rounded for display.
9. Sensitive community and recreational features include: elementary schools, hospitals, nursing homes, homes for the aged, day care centers and children campgrounds.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - PARTIAL SOLIDIFICATION

Note: The indicator developed is for 'surface water suitability' as discussed in Chapter 8, section 3 of the M.M. Dillon - Transportation report. 'Surface water spill pathway' is a sub-indicator which was combined with the sub-indicator, 'downstream water uses' in the report, Gartner Lee Associates Ltd., 1985, Site Selection Process, Phase 4A: Selection of a Preferred Site(s) - Surface Water.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 17: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.651	0.104	0.064	0.168			0.126	
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.078	0.048	0.126	400	0.10	0.126	166
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.491	0.078	0.048	0.127			0.126	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.514	0.050	0.050	0.100			0.016	
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.054	0.009	0.005	0.014			0.098	
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	60
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.433	0.046	0.042	0.088			0.520	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.300	0.039	0.029	0.069			0.260	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.314	0.054	0.031	0.085			0.167	
C. REGIONAL ROAD 65													
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.057	0.059	0.005	0.064	460	0.15	0.098	709
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.057	0.059	0.005	0.064			0.098	

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 19: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-3C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH
D. FRICK ROAD (LOCAL)													
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	100	0.17	0.033	45
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.580	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.665	0.012	0.008	0.020			0.033	
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	100	0.07	0.033	45
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.198	0.027	0.019	0.047			0.033	
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	110	0.16	0.017	43
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.099	0.014	0.010	0.023			0.017	
											TOTAL INDEX	1.494	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 20: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-9C CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. HIGHWAY 20													
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	400	0.08	0.126	123
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.651	0.104	0.064	0.168			0.126	
B. VINELAND TOWLINE ROAD (RR.24)													
1. QEW to RR. 81	3.0	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	60	0.02	0.016	1
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.514	0.050	0.050	0.100			0.016	
2. RR. 81 to Mayer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	475	0.68	0.098	5
				Additives & Reagents	35	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.054	0.009	0.005	0.014			0.098	
3. Mayer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.084	0.014	0.008	0.023			0.000	
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	2065	0.59	0.520	[illegible]
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.433	0.046	0.042	0.088			0.520	
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	1135	0.38	0.260	64
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.300	0.039	0.029	0.069			0.260	
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	810	0.20	0.167	76
				Additives & Reagents	35	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	13135	0.314	0.054	0.031	0.085			0.167	
										TOTAL INDEX		1.186	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Morenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 21: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY - LF-1E CASE 1 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000	
											TOTAL INDEX	0.000	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD FISH DATA FOR SURFACE WATER SPILL PATHWAY - FI 1IN/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS			TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
		1980-1982 ACC. MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL				
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to FI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. FI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	0	0.00	0.000	0
				Additives & Reagents	5	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.004	0.001	.000	0.001			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	1217	0.004	0.001	.000	0.001			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.071	0.010	0.007	0.017			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.271	0.038	0.027	0.064			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	129
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.001	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19764	0.456	0.063	0.045	0.108			0.183	
D. BRITANNIA ROAD													
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	250	0.19	0.077	77
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			.000	
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.003	
				TOTAL	27592	0.209	0.036	0.020	0.056			0.080	
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	320	0.23	0.005	35
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.003	
				TOTAL	7828	0.064	0.011	0.006	0.017			0.008	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.002	0.002	0.004	715	0.51	0.019	32
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.012	
				TOTAL	7828	0.172	0.011	0.017	0.028			0.031	

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 22: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI 13N/LF 4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
4. Hwy. 25 to First Line E.	1.3	6.2	0.06	Special Wastes	0	0.000	0.000	0.000	0.000	200	0.15	0.000	32
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.005	
				TOTAL	6824	0.246	0.009	0.024	0.033			0.005	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.000	65
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.009	
				TOTAL	6824	0.545	0.015	0.053	0.068			0.009	
F. FIFTH LINE (LOCAL)													
1. Britannia Rd. to PI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	400	0.40	0.133	36
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.001	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.005	
				TOTAL	27592	0.199	0.028	0.020	0.047			0.139	
										TOTAL INDEX		0.534	

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm.
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 23: LOCAL AND REGIONAL ACCESS ROAD FISP DATA FOR SURFACE WATER SPILL PATHWAY PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
B. HIGHWAY 25													
1. QEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1825	0.46	0.025	12
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.014	0.004	0.001	0.005			0.025	
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	1660	0.26	0.022	67
				Additives & Reagents	5	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	1004	0.023	0.006	0.002	0.009			0.022	
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	0	0.00	0.000	0
				Additives & Reagents	30	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.067	0.019	0.007	0.025			0.000	
C. FOURTH LINE (RR. 4)													
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	50	0.10	0.016	29
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.067	0.009	0.007	0.016			0.016	
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	50	0.03	0.016	30
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.255	0.035	0.025	0.060			0.016	
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	575	0.18	0.182	128
				Additives & Reagents	30	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.429	0.059	0.042	0.101			0.182	
D. BRITANNIA ROAD													
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	320	0.23	0.093	75
				Additives & Reagents	30	.000	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.151	0.026	0.015	0.041			0.093	
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.407	0.026	0.040	0.066	715	0.51	0.336	32
				Additives & Reagents	30	0.001	.000	.000	.000			.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	18577	0.408	0.026	0.040	0.066			0.336	
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	300	0.14	0.009	55
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.039	
				TOTAL	6824	0.545	0.015	0.053	0.068			0.009	

OWMC PHASE 4A [illegible]

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE [illegible]: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY PI-1N/LF-4N CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m) (6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
E. FIRST LINE EAST (LOCAL)													
1. PI-1N to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	100	0.10	0.000	22
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.001	
				TOTAL	6824	0.049	0.007	0.005	0.012			0.001	

TOTAL INDEX 0.701

Notes: 1. Based upon the receipt of 300.000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A – TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION

TABLE 24: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SURFACE WATER SPILL PATHWAY: PI 27E/LF-1E CASE 2 (1)

RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	TOTAL WATER ENTRY PATHWAY LENGTH (m)(6)	% OF LINK LENGTH	SPILL PATHWAY INDEX (7,8,9)	STREAM LENGTH (km)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)													
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.081	0.009	0.008	0.016			0.000	
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000	0
				Additives & Reagents	35	.000	.000	.000	.000			0.000	
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000	
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000	
3. PI-27E to Crowland Rd.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000	
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000	
B. CROWLAND ROAD (LOCAL)													
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000	
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000	
C. CARL ROAD (LOCAL)													
1. Crowland Rd. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000	0
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000	
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000	
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000	
										TOTAL INDEX		0.000	

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised partial solidification treatment process defined by Monenco Limited, 23 May 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of the stream.
7. The "Spill Pathway Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS - PARTIAL SOLIDIFICATION

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS   LF-7C CASE 1 (1)   RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	DWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY DWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000
2. LF-9C to RR. 65/RR. 27	4	1.4	5.60	Special Wastes	19552	0.491	0.070	0.048	0.126	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.491	0.070	0.048	0.127			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.0	2.3	0.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			0.922
2. RR. 81 to Moyer Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000
3. Moyer Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	35	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.101
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.057
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000
C. REGIONAL ROAD 65												
1. Hwy.20 to Krick Rd.	3	0.2	0.60	Special Wastes	19552	0.057	0.059	0.005	0.064	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.057	0.059	0.005	0.064			0.000

OWMC PHASE IV [illegible]

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 25: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL INTO SENSITIVE HYDROGEOLOGIC LANDS - LF-3C CASE 1 (1) - RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	ONE WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
D. FRICK ROAD (LOCAL)												
1. RR. 65 to 0.6 km. south	0.6	1.61	0.97	Special Wastes	19552	0.085	0.012	0.008	0.020	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.085	0.012	0.008	0.020			0.000
2. 0.6 km. south of RR. 65 to Vaughan Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000
3. Vaughan Rd. to Elcho Rd.	1.4	1.61	2.25	Special Wastes	19552	0.197	0.027	0.019	0.047	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.198	0.027	0.019	0.047			0.000
4. Elcho Rd. to LF-3C	0.7	1.61	1.13	Special Wastes	19552	0.099	0.014	0.010	0.023	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.099	0.014	0.010	0.023			0.000
										TOTAL INDEX		1.111

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2, PARTIAL SOLIDIFICATION

TABLE 26: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-9C CASE 1 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC. MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
A. HIGHWAY 20												
1. RR. 24 to LF-9C	5.3	1.4	7.42	Special Wastes	19552	0.650	0.104	0.064	0.167	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.651	0.104	0.064	0.168			0.000
B. VINELAND TOWLINE ROAD (RR.24)												
1. QEW to RR. 81	3.8	2.3	8.74	Special Wastes	13100	0.513	0.050	0.050	0.100	3500	0.92	0.921
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.514	0.050	0.050	0.100			0.922
2. RR. 81 to Mover Rd.	0.7	1.3	0.91	Special Wastes	13100	0.053	0.009	0.005	0.014	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.054	0.009	0.005	0.014			0.000
3. Mover Rd. to RR. 73	1.1	1.3	1.43	Special Wastes	13100	0.084	0.014	0.008	0.023	150	0.14	0.031
				Additives & Reagents	35	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.084	0.014	0.008	0.023			0.031
4. RR. 73 to Ninth Ave.	3.5	2.1	7.35	Special Wastes	13100	0.431	0.046	0.042	0.088	400	0.11	0.101
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.433	0.046	0.042	0.088			0.101
5. Ninth Ave. to RR. 216	3	1.7	5.10	Special Wastes	13100	0.299	0.039	0.029	0.069	250	0.08	0.057
				Additives & Reagents	35	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.300	0.039	0.029	0.069			0.057
6. RR. 216 to Hwy. 20	4.1	1.3	5.33	Special Wastes	13100	0.313	0.054	0.031	0.084	0	0.00	0.000
				Additives & Reagents	35	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	13135	0.314	0.054	0.031	0.085			0.000
										TOTAL INDEX		1.111

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.20.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION — TABLE 27: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - LF-1E CASE 2 (1) — RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980 1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. GEN to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	19552	0.102	0.018	0.010	0.028	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.103	0.018	0.010	0.028			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	19552	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.141	0.020	0.014	0.033			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	19552	0.113	0.016	0.011	0.027	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.113	0.016	0.011	0.027			0.000
										TOTAL INDEX		0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

SCENARIO 2. PARTIAL SOLIDIFICATION TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI 10N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE		MATERIAL (10)	OWMC ANNUAL ONE WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVEMENT (3)	ANNUAL NUMBER OF SPILLS			LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
		1980-1982 ACC. MVkm	ACCIDENTS PER M.V.				NON ACCIDENT RELATED (4)	ACCIDENT RELATED (5)	TOTAL			
B. HIGHWAY 25												
1. OEW to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-1N	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-1N to Britannia Rd.	1	0.8	0.80	Special Wastes	999	0.004	0.001	.000	0.001	100	0.10	0.001
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.004	0.001	.000	0.001			0.001
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	1217	0.004	0.001	.000	0.001			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.071	0.010	0.007	0.017			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	1217	0.017	0.002	0.002	0.004			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.271	0.038	0.027	0.064			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	1217	0.028	0.004	0.003	0.007			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19764	0.456	0.063	0.045	0.108			0.000
D. BRITANNIA ROAD												
1. Fifth Line to Fourth Line	1.3	1.3	1.69	Special Wastes	19546	0.148	0.025	0.015	0.040	0	0.00	0.000
				Additives & Reagents	1222	0.009	0.002	0.001	0.002			0.000
				Inter-Site Transfers	6824	0.052	0.009	0.005	0.014			0.000
				TOTAL	27592	0.209	0.036	0.020	0.056			0.000
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	999	0.008	0.001	0.001	0.002	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	6824	0.056	0.010	0.005	0.015			0.000
				TOTAL	7828	0.064	0.011	0.006	0.017			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	999	0.022	0.001	0.002	0.004	250	0.18	0.005
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	6824	0.150	0.010	0.015	0.024			0.003
				TOTAL	7828	0.172	0.011	0.017	0.028			0.011

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION TABLE 28: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - FI 13N/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL (10)	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
4. Hwy. 25 to First Line E.	1.3	6.2	8.06	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.246	0.009	0.024	0.033			0.000
				TOTAL	6824	0.246	0.009	0.024	0.033			0.000
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000
F. FIFTH LINE (LOCAL)												
1. Britannia Rd. to FI-13N	1	1.61	1.61	Special Wastes	19546	0.141	0.020	0.014	0.033	0	0.00	0.000
				Additives & Reagents	1222	0.009	0.001	0.001	0.002			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000
				TOTAL	27592	0.199	0.028	0.020	0.047			0.000
											TOTAL INDEX	0.031

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvement.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4B - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-IN/LF-4N CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m) (6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
B. HIGHWAY 25												
1. OEN to Hwy. 5	4	0.8	3.20	Special Wastes	999	0.014	0.004	0.001	0.005	1400	0.35	0.019
				Additives & Reagents	5	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.014	0.004	0.001	0.005			0.019
2. Hwy. 5 to PI-IN	6.4	0.8	5.12	Special Wastes	999	0.023	0.006	0.002	0.009	0	0.00	0.000
				Additives & Reagents	5	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	1004	0.023	0.006	0.002	0.009			0.000
3. PI-IN to Britannia Rd.	1	0.8	0.80	Special Wastes	18547	0.066	0.019	0.007	0.025	100	0.10	0.025
				Additives & Reagents	30	.000	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.067	0.019	0.007	0.025			0.025
C. FOURTH LINE (RR. 4)												
1. Hwy 401 to Main St.	0.5	1.61	0.81	Special Wastes	18547	0.067	0.009	0.007	0.016	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.067	0.009	0.007	0.016			0.000
2. Main St. to Derry Rd.	1.9	1.61	3.06	Special Wastes	18547	0.254	0.035	0.025	0.060	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.255	0.035	0.025	0.060			0.000
3. Derry Rd. to Britannia Rd	3.2	1.61	5.15	Special Wastes	18547	0.428	0.059	0.042	0.101	0	0.00	0.000
				Additives & Reagents	30	0.001	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.429	0.059	0.042	0.101			0.000
D. BRITANNIA ROAD												
2. Fourth Line to Third Line	1.4	1.3	1.82	Special Wastes	18547	0.151	0.026	0.015	0.041	0	0.00	0.000
				Additives & Reagents	30	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.151	0.026	0.015	0.041			0.000
3. Third Line to Hwy. 25	1.4	3.5	4.90	Special Wastes	18547	0.487	0.026	0.040	0.066	250	0.18	0.118
				Additives & Reagents	30	0.001	.000	.000	.000			.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	18577	0.488	0.026	0.040	0.066			0.118
5. First Line E. to LF-4N	2.2	8.1	17.82	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.545	0.015	0.053	0.068			0.000
				TOTAL	6824	0.545	0.015	0.053	0.068			0.000

OWMC PHASE 4A TRANSPORTATION

SCENARIO 2. PARTIAL SOLIDIFICATION   TABLE 29: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGIC LANDS - PI-IN/LF-4N CASE 2 (1)   RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1980-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO-WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m)(6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
E. FIRST LINE EAST (LOCAL)												
1. PI-IN to Britannia Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.002
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000
											TOTAL INDEX	0.162

Notes:
1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION

SCENARIO 2, PARTIAL SOLIDIFICATION TABLE 30: LOCAL AND REGIONAL ACCESS ROAD RISK DATA FOR SPILL ONTO SENSITIVE HYDROGEOLOGICAL LANDS PI-27E/LP-1E CASE 2 (1) RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

LINK DESCRIPTION	LENGTH (km)	ALL VEHICLE 1960-1982 ACC./MVkm	ALL VEHICLE ACCIDENTS PER M.V.	MATERIAL	OWMC ANNUAL ONE-WAY VEHICLE MOVEMENTS (2)	TWO WAY OWMC ANNUAL ACCIDENT INVOLVMENT (3)	ANNUAL NUMBER OF SPILLS NON ACCIDENT RELATED (4)	ANNUAL NUMBER OF SPILLS ACCIDENT RELATED (5)	ANNUAL NUMBER OF SPILLS TOTAL	LENGTH OF SENSITIVE LANDS (m) (6)	% OF LINK LENGTH	SENSITIVE LANDS SPILL INDEX (7,8,9)
A. REGIONAL ROAD 47 (BIGGAR ROAD /LYON'S CREEK ROAD)												
1. QEW to RR. 98	0.4	2.3	0.92	Special Wastes	19552	0.081	0.008	0.008	0.016	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.081	0.008	0.008	0.016			0.000
2. RR. 98 to PI-27E	0.8	1.3	1.04	Special Wastes	19552	0.091	0.016	0.009	0.025	0	0.00	0.000
				Additives & Reagents	35	.000	.000	.000	.000			0.000
				Inter-Site Transfers	0	0.000	0.000	0.000	0.000			0.000
				TOTAL	19587	0.091	0.016	0.009	0.025			0.000
3. PI-27E to Crowland Ave.	0.9	1.3	1.17	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.036	0.006	0.004	0.010			0.000
				TOTAL	6824	0.036	0.006	0.004	0.010			0.000
B. CROWLAND AVE. (LOCAL)												
1. RR. 47 to Carl Rd.	1	1.61	1.61	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.049	0.007	0.005	0.012			0.000
				TOTAL	6824	0.049	0.007	0.005	0.012			0.000
C. CARL ROAD (LOCAL)												
1. Crowland Ave. to Morris Rd.	0.8	1.61	1.29	Special Wastes	0	0.000	0.000	0.000	0.000	0	0.00	0.000
				Additives & Reagents	0	0.000	0.000	0.000	0.000			0.000
				Inter-Site Transfers	6824	0.039	0.005	0.004	0.009			0.000
				TOTAL	6824	0.039	0.005	0.004	0.009			0.000
											TOTAL INDEX	0.000

Notes: 1. Based upon the receipt of 300,000 t/a of special waste and includes the process reagents and additives required to treat this quantity.
2. Based upon the revised total solidification treatment process defined by Monenco Limited, Febuary/March 1985.
3. Derived from all vehicle accident rate using a factor of 2.24.
4. Based on one spill per MVkm..
5. Derived using a conditional probability of 0.196, applied to one-way OWMC annual accident involvment.
6. Length of an access road link that, given a spill, may result in the contamination of hydrogeologically sensitive lands.
7. The "Sensitive Lands Spill Index" is the product of the "% of Link Length", "Total Spills" and the "Hazard Index".
8. The Hazard Indices for the transported materials are, 10 for Special Waste and 1 for Additives and Reagents and Inter-site Transfers.
9. The Indices and Link Totals have been rounded for display.

OWMC PHASE 4A - TRANSPORTATION
TABLE 31
TWO-WAY ANNUAL ACCIDENT INVOLVEMENT ALONG THE TOTAL ACCESS ROAD SYSTEM USING PARTIAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Siting Option and Operating Case	Two-Way Annual Accident Involvement[1]		
	Local & Regional Access Road	Province-Wide Access Road	Total Access Road System
CASE 1 INTEGRATED			
LF-3C			
Special Waste Transport	3.380	3.170	6.550
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.008	0.040	0.049
TOTAL	3.388	3.211	6.599
LF-9C			
Special Waste Transport	2.344	3.171	5.515
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.006	0.040	0.045
TOTAL	2.349	3.211	5.560
LF-1E			
Special Waste Transport	0.528	5.390	5.918
Inter-Site Transfers	-	-	-
Additives & Reagent Transport	0.001	0.044	0.045
TOTAL	0.529	5.434	5.963

OWMC PHASE 4A - TRANSPORTATION

TABLE 32

TWO-WAY ANNUAL ACCIDENT INVOLVEMENT ALONG THE TOTAL ACCESS ROAD SYSTEM USING PARTIAL SOLIDIFICATION AND RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

(Continued)

Siting Option and Operating Case	Two-Way Annual Accident Involvement[1] Local & Regional Access Road	 Province-Wide Access Road	 Total Access Road System
CASE 2 SEPARATE LANDFILL			
PI-13N/LF-4N			
Special Waste Transport	1.109	1.964	3.073
Inter-Site Transfers	1.098	0.000	1.098
Additives & Reagent Transport	0.068	0.354	0.421
TOTAL	2.274	2.318	4.592
PI-1N/LF-4N			
Special Waste Transport	1.411	1.962	3.373
Inter-Site Transfers	0.594	0.000	0.594
Additives & Reagent Transport	0.002	0.034	0.036
TOTAL	2.008	1.995	4.003
PI-27E/LF-1E			
Special Waste Transport	0.172	5.388	5.560
Inter-Site Transfers	0.124	0.000	0.124
Additives & Reagent Transport	0.000	0.045	0.045
TOTAL	0.296	5.434	5.730

NOTE:

1. Annual accident involvement is based upon receipt of 300 000 t/a of special waste and includes the process reagents and additives for partial

OWMC PHASE 4A - TRANSPORTATION

TABLE 32: ANNUAL NUMBER OF SPILLS FOR THE TOTAL ACCESS ROAD SYSTEM - PARTIAL SOLIDIFICATION USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Site/Site Combination and Operating Case	Local & Regional Access Roads			Province Wide Access Roads			Total Access Road System		
	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total	Non-Accident Related(1)	Accident Related(2)	Total
CASE 1 INTEGRATED									
LF-3C									
Special Waste Transport	0.521	0.331	0.852	1.003	0.311	1.314	1.524	0.642	2.166
Additive & Reagent Transport	0.001	0.001	0.002	0.016	0.004	0.020	0.017	0.005	0.022
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.522	0.332	0.854	1.019	0.315	1.334	1.541	0.647	2.188
LF-9C									
Special Waste Transport	0.316	0.230	0.546	1.003	0.311	1.314	1.319	0.540	1.860
Additive & Reagent Transport	0.001	0.001	0.001	0.016	0.004	0.020	0.016	0.004	0.021
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.317	0.230	0.547	1.019	0.315	1.334	1.336	0.545	1.880
LF-1E									
Special Waste Transport	0.076	0.052	0.128	1.507	0.528	2.035	1.583	0.580	2.163
Additive & Reagent Transport	0.000	0.000	0.000	0.017	0.004	0.021	0.017	0.004	0.022
Inter-Site Transfers	--	--	--	--	--	--	--	--	--
TOTAL	0.076	0.052	0.128	1.524	0.532	2.056	1.601	0.584	2.185
CASE 2 SEPARATE LANDFILL									
PI-13N/LF-4N									
Special Waste Transport	0.163	0.109	0.272	1.025	0.192	1.217	1.188	0.301	1.489
Additive & Reagent Transport	0.010	0.007	0.016	0.166	0.034	0.200	0.176	0.041	0.216
Inter-Site Transfers	0.059	0.108	0.166	0.000	0.000	0.000	0.059	0.108	0.166
TOTAL	0.231	0.223	0.454	1.191	0.226	1.417	1.422	0.588	1.871
PI-1N/LF-4N									
Special Waste Transport	0.185	0.138	0.323	1.025	0.192	1.217	1.210	0.331	1.541
Additive & Reagent Transport	0.000	0.000	0.001	0.014	0.004	0.018	0.014	0.004	0.018
Inter-Site Transfers	0.022	0.058	0.080	0.000	0.000	0.000	0.022	0.058	0.080
TOTAL	0.207	0.197	0.404	1.039	0.196	1.235	1.246	0.456	1.702
PI-27E/LF-1E									
Special Waste Transport	0.023	0.017	0.040	1.507	0.528	2.035	1.531	0.545	2.075
Additive & Reagent Transport	0.000	0.000	0.000	0.017	0.004	0.021	0.017	0.004	0.022
Inter-Site Transfers	0.018	0.012	0.031	0.000	0.000	0.000	0.018	0.012	0.031
TOTAL	0.042	0.029	0.071	1.524	0.532	2.055	1.566	0.562	2.128

Notes: 1. Based on one spill per million vehicle kilometers
2. Derived using a conditional probability Of 0.196 applied to the one-way OWMC annual accident involvement.

OWMC PHASE 4A - TRANSPORTATION

TABLE 33

FACTOR/INDICATOR VALUES FOR EACH SITING OPTION USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS (PARTIAL SOLIDIFICATION)

Factor	Indicator	Values at Each Siting Option					
		LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E
1. Province-wide Hazard Based Spill Index	a) Spills Index due to motor vehicle accidents	3.110	3.110	5.284	1.924	1.954	5.284
	b) Spills Index due to non-motor vehicle accidents	10.046	10.046	15.087	10.264	10.416	15.087
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	10894.5	13273.5	26.2	1167.8	981.8	16.6
	b) Road User Risk Index	50.33	56.03	1.70	11.78	8.54	1.17
	c) Sensitive Uses Risk Index	12.01	24.64	0	0	0	0
	d) Surface Water Suitability Risk Index	1.186 -4	1.494 -5	0 -1	0.701 -3	0.534 -3	0 -1
	e) Sensitive Hydrogeologic Lands Risk Index	1.111	1.111	0	0.162	0.031	0
3. Province-wide Accident Involvements	a) Annual Accident Involvements by OWMC generated trucks	3.21	3.21	5.43	2.00	2.32	5.43
4. Risks due to Accident Involvements on Local and Regional Access Roads	a) Road User Risks	22.563	24.617	0.741	5.012	4.461	0.604

NOTE: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 34

FACTOR/INDICATOR VALUES FOR EACH SITING OPTION

USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

(PARTIAL SOLIDIFICATION)

Factor	Indicator	Weight	Scaled Value (and Scaled Value x Indicator Weighting) for Each Siting Option						
			LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E	Maximum Base Case
1. Province-wide Hazard Based Spill Index	a) Spill Index due to motor vehicle accidents	1	3.110	3.110	5.284	1.924	1.954	5.284	
	b) Spill Index due to non-motor vehicle accidents	1	10.046	10.046	15.087	10.264	10.416	15.087	
	Aggregated Factor Score:		13.156	13.156	20.371	12.188	12.370	20.371	21.012
	Factor Suitability Level:		-3.13	-3.13	-4.85	-2.90	-2.94	-4.85	
2. Risks due to Spills on Local and Regional Access Roads	a) Population Risk Index	5	0.81(4.03)	0.98(4.91)	0.002(0.01)	0.09(0.43)	0.07(0.36)	0.001(0.01)	13512.9
	b) Road User Risk Index	4	0.88(3.53)	0.98(3.93)	0.03 (0.12)	0.21(0.83)	0.15(0.60)	0.02(0.08)	57.06
	c) Sensitive Uses Risk Index	3	0.48(1.44)	0.98(2.95)	0 (0)	0 (0)	0 (0)	0 (0)	25.05
	d) Surface Water Suitability Risk Index	2	0.80(1.60)	1.00(2.00)	0.20 (0.40)	0.60(1.20)	0.60(1.20)	0.20(0.40)	5
	e) Sensitive Hydrogeologic Lands Risk Index	1	0.98(0.98)	0.98(0.98)	0 (0)	0.14(0.14)	0.03(0.03)	0 (0)	1.133
	Aggregated Factor Score:		11.58	14.77	0.53	2.60	2.19	0.49	15.00
	Factor Suitability Level:		-3.86	-4.92	-0.18	-0.85	-0.73	-0.15	
3. Province-wide Accident Involvements	a) Annual Number of Accident Involvements by OWMC generated trucks	1	0.46(0.46)	0.46(0.46)	0.78 (0.78)	0.29(0.29)	0.34(0.34)	0.78(0.78)	
	Factor Suitability Level:		-2.32	-2.32	-3.92	-1.45	-1.68	-3.92	6.92
4. Risks due to Accident Involvements on Local and Regional Roads	a) Road User Risks	1	0.77(0.77)	0.84(0.84)	0.03 (0.03)	0.17(0.17)	0.15(0.15)	0.02(0.02)	
	Factor Suitability Level:		-3.86	-4.22	-0.13	-0.86	-0.76	-0.10	29.18

Note: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 35

AGGREGATION OF TRANSPORTATION RISK FACTORS USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

(PARTIAL SOLIDIFICATION)

		Factor Suitability (and Suitability x Weight) for each Siting Option					
Factor	Weight	LF-9C	LF-3C	LF-1E	PI-1N/ LF-4N	PI-13N/ LF-4N[1]	PI-27E/ LF-1E
1. Province-wide Hazard Based Spill Index	8	-3.13 (-25.0)	-3.13 (-25.0)	-4.85 (-38.8)	-2.90 (-23.2)	-2.94 (-23.5)	-4.85 (-38.8)
2. Spill Risks on Local and Regional Roads	10	-3.86 (-38.6)	-4.92 (-49.2)	-0.18 (-1.8)	-0.85 (-8.5)	-0.73 (-7.3)	-0.15 (-1.5)
Aggregated Value for Spill Factors:		-63.6	-74.2	-40.6	-31.7	-30.8	-40.3
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd
3. Province-wide Accident Involvements	8	-2.32 (-18.6)	-2.32 (-18.6)	-3.92 (-31.4)	-1.45 (-11.6)	-1.68 (-13.4)	-3.92 (-31.4)
4. Accident Involvement Risks on Local and Regional Roads	10	-3.86 (-38.6)	-4.22 (-42.2)	-0.13 (-1.3)	-0.86 (-8.6)	-0.76 (-7.6)	-0.10 (-1.0)
Aggregated Value for Accident Involvement Factors:		-57.2	-60.8	-32.7	-20.2	-21.0	-32.4
Site Option Ranking:		5th	6th	4th	1st	2nd	3rd
Aggregated Value for all Factors:		-120.8	-135.0	-73.3	-51.9	-51.8	-72.7
Site Option Ranking:		5th	6th	4th	2nd	1st	3rd

NOTE: 1. No rail transport to this site option. All materials transported by truck.

OWMC PHASE 4A - TRANSPORTATION

TABLE 36

RANKING OF SITES: BASE CASE AND PARTIAL SOLIDIFICATION USING RAIL TRANSPORT FOR ADDITIVES AND REAGENTS

Rank	Siting Option	Aggregated Factor Value	Aggregated Factor Suitability Level
1st	PI-13N/LF-4N - partial + rail	51.8	-1.70
2nd	PI-1N/LF-4N - partial + rail	51.9	-1.71
3rd	PI-13N/LF-4N	55.4	-1.82
4th	PI-1N/LF-4N	58.4	-1.92
5th	PI-27E/LF-1E - partial + rail	72.7	-2.39
6th	LF-1E - partial + rail	73.3	-2.41
7th	PI-27E/LF-1E	84.0	-2.76
7th	LF-1E	84.0	-2.76
9th	LF-9C - partial + rail	120.8	-3.97
10th	LF-3C - partial + rail	135.0	-4.44
11th	LF-9C	137.0	-4.51
12th	LF-3C	152.0	-5.00

APPENDIX Q

A STATISTICAL ANALYSIS OF VARIATION IN TRANSPORTATION RISK FOR OWMC CANDIDATE SITES

NOTE: This Appendix contains the report prepared by StatPlan (July 1985), subconsultant to M.M. Dillon Limited - Transportation and presented to OWMC.

INTRODUCTION

The purpose of this report is to develop and apply a method to determine whether significant differences exist in truck accident and toxic waste spill risks among the O.W.M.C. candidate disposal sites.

Data for this report were developed by M. M. Dillon based on historical and estimated accident data for the Ontario road/highway system kept by The Ontario Ministry of Transportation and Communications, and spill frequency data from other sources. Accident and spill data employed in this report are summarized in Table One following.

The analysis undertaken here takes as given the method employed by M. M. Dillon and the results generated by the use of that method. The results of this analysis should be interpreted keeping in mind that variances for the risk estimates were estimated by assuming an underlying Poisson distribution. Where noted below, subjective analysis was performed for comparisons with small sample sizes; this analysis should be considered illustrative only.

Table One

Summary of Transportation Accident and Spill Data

Site/Combination	Annual Number of Truck Accident Involvements	Annual Number of In-Transit Spills due to Accidents	Annual Number of In-Transit Spills not due to Accidents	Annual Number of Total In-Transit Spills
LF4N/PI1N	5.27	0.519	1.518	2.036
LF4N/PI13N	5.99	0.587	1.570	2.157
LF3C	8.31	0.813	2.025	2.838
LF9C	7.13	0.698	1.792	2.490
LF1E	7.52	0.737	2.106	2.842
LF1E/PI27E	7.38	0.723	2.084	2.807

Source: M. M. Dillon

THEORETICAL CONSIDERATIONS

In an engineering study of the kind undertaken by M. M. Dillon, it is often assumed that the estimates provided by a simulation model can be viewed in the same light as established empirical engineering standards. In a statistical sense, such estimates would therefore be treated as parameters (i.e. means) of a probability distribution, and would be considered true averages around which actual observed values would be known to be distributed in some fashion.

In our view, because of the importance of accidents and spills as a criterion in the selection of a waste disposal site, and because of the variability of accident data over space and time, the M. M. Dillon risk estimates should be viewed as sample statistics (rather than population parameters) and hence, subject to sampling error in space and time.

Possible sampling error in the time dimension is introduced because the accident and subsequent spill estimates are based on actual accident data only for the years 1980 - 1982 inclusive; these years may not be representative of accidents in the long term because of atypical weather or road conditions. Possible sampling error in the space dimension arises due to the arbitrary nature of the division of the road system into links for measurement purposes, and the numerous sources of error in counting both accidents and mileages on those links.

The incorporation of statistical variation in the Dillon simulation model would have been extremely difficult. However, we have reviewed the accident/spill estimates and the process through which they were generated in order to determine how much statistical precision can be attributed to them.

Accident and spill data of the sort under study here is often presumed to follow the Poisson probability distribution; however, in this study, there is some uncertainty about the shape of the underlying probability distribution. For the purposes of the analysis undertaken here, it was necessary to assume a Poisson distribution for the purposes of estimating the variance of the distribution from the mean. However, the sampling and testing approach developed here relies primarily on samples of sufficient size to permit the assumption that the differences between sample means are (approximately) normally distributed.

Commonly accepted procedures exist for determining, with a specified level of confidence, whether two independent samples are drawn from populations having the same mean. When a test of the difference between two sample means is conducted at more than (approximately) 30 degrees of freedom, the sampling distribution of the difference between means is distributed normally regardless of the shapes of the underlying population distributions. At less than (approximately) 30 degrees of freedom, the shape of the underlying populations must be known in order to determine the shape of the sampling distribution of the difference between two means.

A REVIEW OF THE DILLON METHOD FOR ESTIMATING ACCIDENTS AND SPILLS

Estimates of accident involvements were based on O.M.T.C. records of accidents on designated links in the Ontario road and highway system supplemented by local estimates, for the years 1980 - 1982 inclusive. These estimates were adjusted to represent the proportion of accidents involving trucks of the kind used in toxic waste haulage, and were applied to simulated volumes of waste transported, miles travelled, and routes selected. Estimated accident involvements for a particular waste disposal site were generated as the sum of accident involvements on links travelled. Truck accident involvements were converted to spill frequencies through the application of a constant based on historic spill patterns in Ontario.

The variability in these estimates is generated primarily by the variation in accident rates from link to link and from year to year. What must be determined is the corrected sample size which should be assumed in the hypothesis testing procedure.

SAMPLING APPROACH EMPLOYED

In this analysis, the road/highway links used in estimating spill and accident risks can be considered observations comprising the samples. Therefore, mean annual accident and spill estimates in Table One can be viewed as point estimates made across these links, about which confidence intervals can be constructed and tests of differences conducted.

In order to conduct a test of the difference between two means (with respect to accidents or spills expected), statistical theory requires that the samples being compared be independent. Insofar as any two candidate sites share the assignment of waste loads to common links, this assumption is violated. As a result, a test of the difference between two estimates of accident involvements or spills cannot simply assume that if there are n_1 observations for Site #1 and n_2 observations for Site #2, that the test can be conducted using the minimum of $(n_1 - 1)$, or $(n_2 - 1)$ degrees of freedom. The correct approach would appear to be to identify as closely as possible the number of observations unique to each of the two sites. The effect of this choice is to make more difficult the rejection of the equal means hypothesis.

The impact analysis employed by M. M. Dillon requires the use of mean accident involvements and mean number of spills calculated over all links (unique or not) serving a site. This method (because it utilizes common links in the estimation of site means) has the effect of reducing the apparent difference between the mean accident involvements or spills for any two sites. The combination of the use of common links in the calculation of means, while counting only unique links in determining the number of degrees of freedom, leads to reasonable assurance that any tested differences in accident or spill rates between two sites are true differences. Thus, the method overall is "conservative", in that significant differences in sample means are almost certainly indicative of true differences.

ANALYSIS OF DIFFERENCES

M. M. Dillon calculated the number of unique O.M.T.C. road links for each pairwise site comparison. Split links, and links for which only accident data estimates were available, were excluded from these sample sizes, which are summarized in Table Two following.

Tests of the differences between accident involvements and total spills were conducted for each of the 15 pairwise site comparisons, using the equation

$$z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_1^2}{n_2}}}$$

Absolute differences in accident-caused spills were so small that statistical analysis was unable to show significant differences.

In several cases noted in Table Three following, the sample sizes are not sufficient to conduct the tests while assuming normality of the sampling distribution. These results should be considered only roughly indicative of the differences, and are included only for comparison purposes.

Table Two

Number of Unique Links (Observations) for Pairwise Statistical Comparisons

Test Reference No.	Site #1	Site #2	n_1	n_2
1	PI13N/LF4N	PI1N/LF4N	1	0
2	PI13N/LF4N	LF3C	39	32
3	PI13N/LF4N	LF9C	39	31
4	PI13N/LF4N	LF1E	37	32
5	PI13N/LF4N	PI27E/LF1E	37	32
6	PI1N/LF4N	LF3C	38	32
7	PI1N/LF4N	LF9C	38	31
8	PI1N/LF4N	LF1E	36	32
9	PI1N/LF4N	PI27E/LF1E	36	32
10	LF3C	LF9C	1	0
11	LF3C	LF1E	13	15
12	LF3C	PI27E/LF1E	13	15
13	LF9C	LF1E	12	15
14	LF9C	PI27E/LF1E	12	15
15	LF1E	PI27E/LF1E	0	0

Source: M. M. Dillon

Table Three

Summary of Pairwise Comparisons: Accident Involvements and Total In-Transit Spills

Test No.	Sites	Sample Sizes	d.f.	Accident Involvements x	Accident Involvements z-score	Accident Involvements p-value	Total In-Transit Spills x	Total In-Transit Spills z-score	Total In-Transit Spills p-value
1	PI13N/LF4N PI1N/LF4N	1 0	-	5.99 5.27	-	-	2.157 2.036	-	-
2	PI13N/LF4N LF3C	39 32	31	5.99 8.31	3.61	<0.1	2.157 2.838	1.7946	3.67
3	PI13N/LF4N LF9C	39 31	30	5.99 7.13	1.841	3.29	2.157 2.490	0.904	18.41
4	PI13N/LF4N LF1E	37 32	31	5.99 7.52	2.428	0.75	2.157 2.842	1.786	3.67
5	PI13N/LF4N PI27E/LF1E	37 32	31	5.99 7.38	2.219	1.32	2.157 2.807	1.701	4.46
6	PI1N/LF4N LF3C	38 32	31	5.27 8.31	4.817	< 0.1	2.036 2.838	2.126	1.62
7	PI1N/LF4N LF9C	38 31	30	5.27 7.13	3.063	0.11	2.036 2.490	1.241	10.75
8	PI1N/LF4N LF1E	36 32	31	5.27 7.52	3.643	<0.1	2.036 2.842	2.114	1.74
9	PI1N/LF4N PI27E/LF1E	36 32	31	5.27 7.38	3.436	<0.1	2.036 2.807	2.029	2.12

(continued)

Table Three (continued)

Summary of Pairwise Comparisons: Accident Involvements and Total In-Transit Spills

Test No.	Sites	Sample Sizes	d.f.	Accident Involvements			Total In-Transit Spills		
				x	z-score	p-value	x	z-score	p-value
10	LF3C LF9C	1 0	-	8.31 7.13	-	-	2.838 2.490	-	-
11	LF3C LF1E	13 15	*	8.31 7.52	0.7397	22.96	2.838 2.842	0.006	49.6
12	LF3C PI27E/LF1E	13 15	*	8.31 7.38	0.8744	19.22	2.838 2.807	0.0487	48.01
13	LF9C LF1E	12 15	*	7.13 7.52	0.3726	35.57	2.490 2.842	0.559	28.77
14	LF9C PI27E/LF1E	12 15	*	7.13 7.38	0.2399	40.52	2.490 2.807	0.505	30.85
15	LF1E PI27E/LF1E	0 0	-	7.52 7.38	-	-	2.842 2.807	-	-

Note:

* insufficient degrees of freedom to assume normality in the sampling distribution. Included for illustrative purposes only

x = mean
p-value = probability value on hypothesis test (%)

REGIONAL COMPARISONS

As a result of the risk assessment method utilized by M. M. Dillon, candidate sites in close proximity will, by definition and logically, have very similar accident and spill estimates. Therefore, a regional comparison has been undertaken to determine whether major differences in risk arise from the operation of sites in Milton, West Lincoln and Niagara Falls generally.

Table Four following demonstrates that despite intra-regional similarities in risk estimates, the regions themselves offer often significant differences in accident and spill risks.

Table Four

Regional Comparisons of Annual Accident Involvements

	Milton	West Lincoln	Niagara Falls
Milton	Tests : 1 p-values: ---	Tests : 2,3,6,7 p-values: max 3.29	Tests : 4,5,8,9 p-values: max 1.32
West Lincoln		Tests : 10 p-values: ---	Tests : 11,12,13,14 p-values: 19.22 -- 40.52
Niagara Falls			Tests : 15 p-values: ---

Note: each cell contains the test reference number and the probability value range for the tests.

Table Four (continued)

Regional Comparisons of Annual Total In-Transit Spills

	Milton	West Lincoln	Niagara Falls
Milton	Tests : 1 p-values: ---	Tests : 2,3,6,7 p-values: 1.62 -- 18.41	Tests : 4,5,8,9 p-values: 1.74 -- 4.46
West Lincoln		Tests : 10 p-values: ---	Tests : 11,12,13,14 p-values: 28.77 - 49.6
Niagara Falls			Tests : 15 p-values: ---

Note: each cell contains the test reference numbers and the probability value range for the tests.

CONCLUSIONS

1. It was impossible to conduct statistical analysis on intra-regional risk variation, since the sites within a region are so close as to reduce to almost zero the number of unique links.

2. Regional differences are detectable. At the .05 level of significance, either Milton site is significantly safer than either of the West Lincoln or Niagara Falls sites, in terms of total accident involvements. It was necessary to subjectively interpret differences between West Lincoln and Niagara Falls sites, since the number of degrees of freedom on the tests was insufficient to run the tests formally. However, it appears that in terms of accident involvements, there is no significant difference between West Lincoln and Niagara Falls sites. With respect to total in-transit spills, the same general conclusions apply; however, because of smaller absolute differences in estimated spills, significance levels are higher.

POOR

QUALITY

ORIGINAL